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The front cover shows the men and the new Mack truck of New York's Rescue Squad No. 1. Captain Patrick T. Green (with arm extended) is reporting to Commissioner Quayle and Chief of Staff Frank Murphy (right). They are at the fire in the Brooklyn-Battery subway tunnel, where Captain Green won top citation "for heroic work at extreme personal risk."

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Good Service Depends on Good Earnings

There is still much to be done to make the Bell System big enough for the nation's needs. It will take a lot of money.

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Our Municipal Notebook

International Union of Cities Revitalized

PROGRESS in reorganizing the International Union of Cities was announced last month by Mayor George W. Welsh of Grand Rapids, Mich., on his return from a visit to Stockholm, Oslo, Copenhagen, Helsinki, and The Hague, as chairman of a delegation representing the United States Conference of Mayors. In addition to Mayor Welsh, as president, and Paul V. Betters, of Washington, D. C., as executive director of the Mayors' Conference, the delegation comprised Mayors Stanley W. Church, of New Rochelle, N. Y., Clyde E. Fant, of Shreveport, La., and Thomas D'Alesandro, Jr., of Baltimore.

This special committee attended at The Hague, on September 28 and 29, a meeting of representatives from Austria, Belgium, Canada, Denmark, Finland, France, Great Britain, Netherlands, Norway, Switzerland, and the United States, and from the U. S. Military Government in Germany.

Reporting on this meeting, Mayor Welsh said:

In one capacity or another I have attended many international conferences. But I have never been at one before which proceeded with less national or political friction. We all recognize that municipal government is basically good housekeeping, and that there is no political way to do that kind of job. We were able to meet on equal terms with no suggestion of power politics, domination by one government, or separation into cliques.

Because the Dutch Union of Cities is a large and successful organization, with a large and excellent staff, ably directed, it was agreed to transfer the headquarters of the International Union from Brussels to The Hague. The gentleman who had been the Union's distinguished president for 12 years, Mr. G. Montagu Harris, of Great Britain, gracefully retired in favor of Dr. P. J. Oud, the Mayor of Rotterdam and president of the Dutch Union, who visited the United States last year as the guest of the United States Conference of Mayors.

M. Emile Vinck, of Belgium, who founded the Union in 1913 at Ghent, and who had been the burning crusader behind it ever since, despite the interruption of two wars, also asked to be relieved of his duties, since he, as is Mr. Harris, is approaching 80 years of age. He was succeeded by Mr. Arkema, and M. L. Wouters, also of Belgium, the Assistant Secretary General, was succeeded by Miss H. J. D. Revers, the Deputy Director of the Dutch Union.

We agreed to appoint an executive committee of seven, upon which the United States Conference does not wish representation at this time, to be the governing board of the Union, and gave it power to simplify and modernize the constitution and by-laws, for ratification next year at a General Assembly in Geneva the week of September 12.

Our colleagues graciously accepted also our suggestion that individual cities be allowed to join. This is partly to augment the revenue of the organization, which has a very small budget, and partly to enable individual cities to send their experts to various meetings where they may take full part in the technical discussions.

The members of the conference were much moved by a statement by Mr. Vinck that one of the great needs of our times is the inculcation of civic responsibility, a task which the cities, through their schools and other media, are best equipped to carry out.

Taxes Equal $344 Per Person

NET TAX collections in 1947—federal, state, and local—totaled $49,600,000,000, according to a report by the Bureau of the Census on "Governmental Revenue in 1947." This is an average of $344 per person in the United States. Three-fourths of the total, or $257 per person, represented net federal tax collections, with state governments receiving $47 per capita and local governments accounting for the other $40 per person. These amounts reflect net collections in the 1947 fiscal year, after deduction of tax refunds.

Taxes accounted for 95% of the $52,100,000,000 total of governmental revenue in 1947, the Census report shows, with fees and other miscellaneous charges and non-tax revenue amounting to $2,500,000,000.

Federal Government revenue has declined in the past two years, but state and local revenue has been rising, from $12,400,000,000 in 1945 to $13,200,000,000 in 1946 and a new high of $15,300,000,000 in 1947. Total 1947 revenue of all governments was more than double the 1942 amount, Federal revenue having mounted by 179% and state and local revenue by 34%.

Because of financial grants and tax-sharing as between different levels of governments, each level finally has for its own direct spending an amount of money differing from the amount it collects directly in taxes and charges. Taking account of such transfers, the Federal Government had 71% of all governmental revenue in 1947 "for its own purposes," the states 11%, and local governments 18%.

Revenue Sources

Taxes on individual incomes provided more than a third of all governmental revenue in 1947, according to the Census Bureau figures. A net total, excluding refunds, of $18,300,000,000 or $127 per person was collected under such taxes in 1947, $17,800,000,000 by the Federal Government and the other half-

The American City Quiz

Match Wits With the Experts

QUESTIONS

1. ***How many cubic yards of refuse per man-hour should one expect to handle with a modern refuse truck?***
2. ***What does the term "unconsumed residue" mean in incinerator operation?***
3. ***What precautions should one use with concrete made of air-entrained portland cement?***
4. ***How can one locate cracks in cast iron pipe?***
5. ***What states exercise control over groundwater pumping?***
6. ***What general precautionary measures should an operator take to guard against taste and odor problems?***
7. ***How long should the collector mechanisms of a clarifier be run in daily operation?***
8. ***Does the addition of ground garbage to a sewage-treatment plant increase the cost of treatment?***
9. ***What is a good figure for salt use without abrasives to control snow and ice on city streets?***
10. ***How effective a sterilizing agent is bromine in swimming-pool operation?***

(Answers on Page 7)

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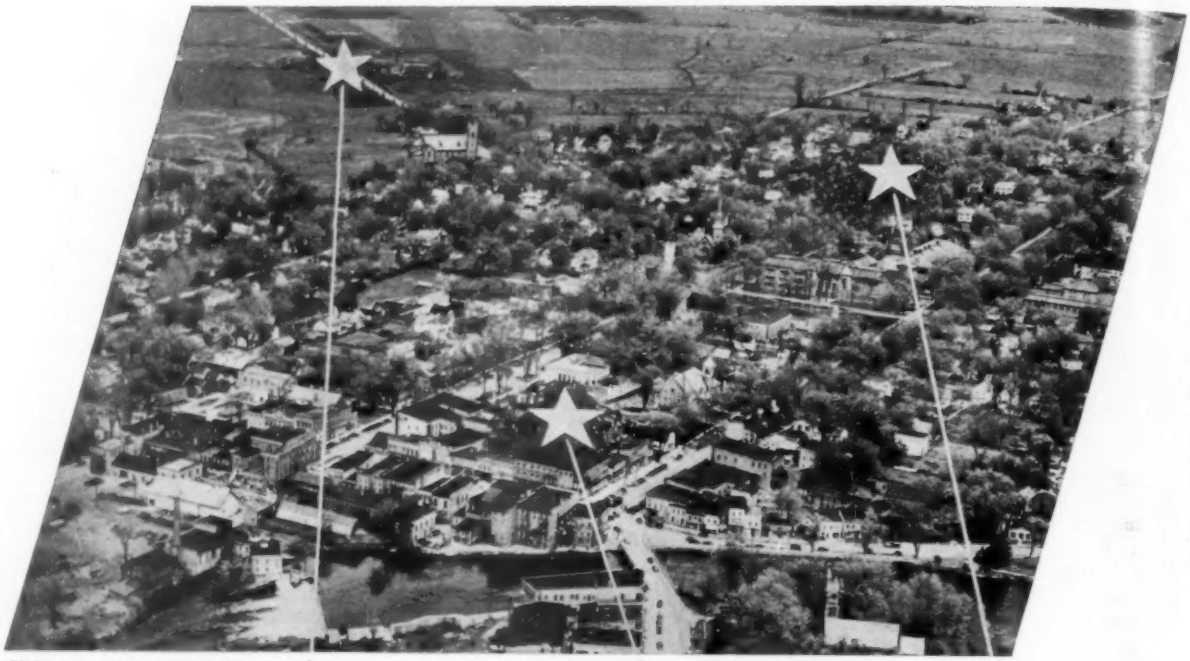

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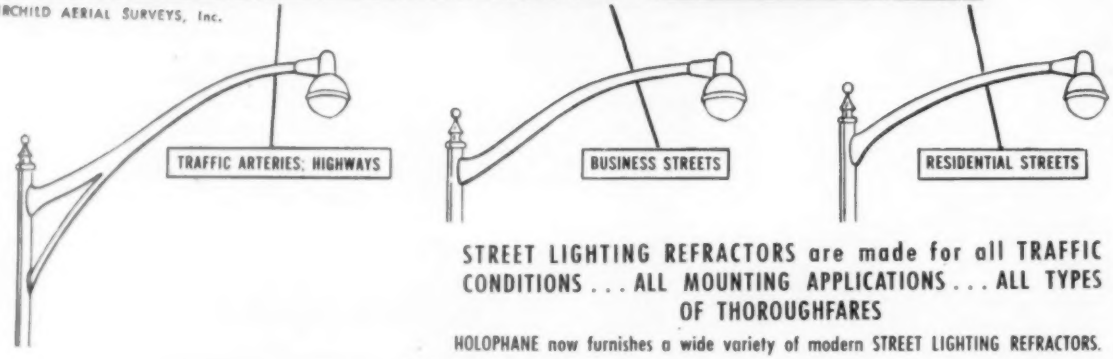

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billion principally by various states.

Revenue from sales (including gasoline) and gross receipts taxes and federal customs made up the second-largest segment of governmental revenue in 1947, amounting to $11,300,000,000 or $79 per capita. This is an increase of 15% from the previous year, and a rise of 99% from the 1942 level.

Collections from corporation income taxes—primarily a Federal Government revenue—dropped 26% from 1946 to 1947. There was a net total of $9,100,000,000, after deduction of refunds, in 1947 corporation income tax revenue.

Property taxes continue to represent the largest single class of state-and-local revenue. Such taxes yielded $5,500,000,000 in 1947, 11% more than in the previous year. All but a quarter-billion of this amount represented local revenue, the remainder being state tax collections. The Federal Government does not impose property taxes.

All other taxes together—social insurance, death and gift, and miscellaneous minor classes—accounted for 10% of federal, state, and local government revenue in 1947.

Highlights of National Recreation Congress

MORE than 1,000 delegates from 46 states and three foreign countries attended the 30th National Recreation Congress held in Omaha from September 26 to October 1. The Recreation Congress maintained even more extensively and intensively than ever before its tradition as a hard-working convention.

General sessions were devoted to brief summaries of the discussion meetings and to addresses by outstanding leaders. Among the latter was Dr. William Alexander, of Oklahoma City, who said, "Young people today are basically sound, basically moral, and basically honest—and more than anything else, we need to believe in them and show them we believe in them. One of the best ways is to give them trained, professional recreation leadership so they will not have to go to the dark corners for their social contacts."

Governor Val Peterson of Nebraska told the delegates that farm and small-town children now have the same leisure-time needs as the city children, and that communities, schools, and churches must meet the challenge.

Dr. William Menninger, of the Menninger Foundation, said that recreation facilities are just as important to a city as sanitary facilities and the public ought to realize it. According to Dr. Menninger, recreation can make a real contribution to peace of mind and without it psychiatry would lack one of its vital tools in curing mental ailments.

Major General Lewis A. Pick, co-author of the Pick-Sloan Plan for the Missouri River Basin, thrilled the delegates with a statement that when the Plan was completed, the area would become the world's recreation paradise. He said that six vast new reservoirs with a combined shoreline of more than 5,000 miles will soon provide unlimited recreation facilities for residents of the Midwest.

Other special speakers were Miss Margaret Hickey, of the *Ladies Home Journal*, who urged the delegates to call American women to aid in the tremendous task of recreational leadership; President J. L. Zwingle, of Park College, who called upon recreation leaders to preserve the "kind of life in which human beings can become worthy of themselves"; and William H. Cooper, of Hampton Institute, who emphasized that "we must build our program county by county, community by community, in terms of the interests and resources of the local people."

The American City Quiz

Match Wits With the Experts

Answers to questions on page 5

1. Bloomfield, N. J., estimates 5.5 cubic yards per man-hour, compared with 4.4 in open trucks. This was recorded in a report delivered when Bloomfield adopted municipally operated refuse collection. The city uses Leach Refuse Getters.

2. Robert Stellwagen, Detroit consulting engineer, explains that it is a measure of the material in the residue that still can be destroyed by further burning. It is one of the most revealing tests of how thoroughly an incinerator is operating. Detroit records figures of 1½%, comparing with good boiler operation. To make the test, a sample is subjected to a temperature of 1,600° F. for four hours.

3. The Portland Cement Association recommends that one should reduce the batch weight of sand by about 3% and the water content by ¼ gallon per sack. Finishing should be carried closely to the placement. The finishing machine should be set for 6 to 8 oscillations per foot of progress.

4. The Cast Iron Pipe Research Association recommends cleaning the surface, applying a thin coating of turpentine, wiping off the excess, and dusting on a thin coating of cement. The crack will be disclosed by a wet line.

5. Seven states exercise control both over the sanitary quality and the amount of water used. They are New Mexico, Maryland, Minnesota, New York, North Dakota, Utah, and Wisconsin. Ohio has indirect control. New Jersey has control over public supplies; Massachusetts and North Caroline have general restrictions.

6. John Radcliff, Chemist, Elizabethtown, N. J., water company, recommends these:

Drink odor-free water one day a week.

Run threshold-odor tests not only as a check against odors but also as a check on plant operation.

Use activated carbon ahead of the filter, preferably prior to coagulation.

7. If the collector operation is controlled by a time-clock, it need run only a few minutes out of each hour. If the sludge pumps are coordinated with this, you will insure delivery of fresh sludge to the digesters and cut the wear and tear on the clarifier. John Hood, of Ridgewood, N. J., and Arthur Lehmann of Hackensack, N. J., both control operations in this way.

8. It increases the solids and BOD to be removed by the plant; it entails a greater cost in sludge handling and possibly more thorough treatment. However, certain plants capitalize on the use of this ground garbage and turn it to a profit. Marion, Ind., is an example. Officials here feel that it reduces costs enough so that the sewage department pays the refuse department $1.00 per ton for garbage delivered to the plant. The garbage is ground, placed directly into the digesters, and increases the volume of gas generated and used for pump and blower operation, thus cutting power costs.

9. Hudson, Mass., uses one ton of rock salt per 5 miles of pavements for light snows and freezing rains. Newark, N. J., spreads ¼ pound per square yard.

10. The Illinois Department of Health reports that it has about the same bacteriological results as does a free chlorine residual. Of the operators interviewed, 82% found bromine equipment easier to handle and many reported a reduction in eye and skin complaints.

Send in your suggested questions with the answers on municipal topics for use in this feature. THE AMERICAN CITY will make a small payment for each question accepted.

Salisbury
ADDS TWO
HORTON
Elevated Tanks

Two Horton elevated tanks, a 1,000,000-gal. and a 250,000-gal. unit, were recently added to the water distribution system of Salisbury, N. C. The new tanks will provide a supply of gravity water to improve pressures in the mains throughout the city. Salisbury can expect several benefits from its improved water system, including lower pumping costs, more uniform pressures, and a dependable water supply for fire protection.

The 1,000,000-gal. tank at Salisbury, shown above, is a Horton radial-cone bottom structure, 140 feet to bottom, utilizing a design which makes it possible to build large capacity tanks which do not have excessive ranges in head. The 250,000-gal. unit at the left is an ellipsoidal bottom tank of special proportions, 125 feet to bottom. It has the same range in head as the 1,000,000-gal. tank. The welded steel construction used in both tanks is specified for durability, simple maintenance, and clean appearance.

The complete line of Horton elevated tanks includes standard sizes from 5,000 to 2,000,000 gallons for both municipal and industrial installations. Write our nearest office for details and estimating figures.

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Salt Lake City 1.....1501 First Security Bank Bldg.
San Francisco 11.....1233—22 Battery Street Bldg.
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Tulsa 3.....1625 Hunt Bldg.

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PENNSYLVANIA

Water Supply and Treatment

Watershed Inspection—What It Entails

WHAT is required in a good watershed inspection was outlined by Fredrick O. A. Almquist, Principal Sanitary Engineer of the Connecticut State Department of Health, in a paper delivered before the New England Water Works Association in New York City recently.

Of primary importance is an inspection above the reservoir and intake. A system should have at least one annual inspection of the drainage area, and several of the treatment plant, pumping stations, and similar points where pollution of the water supply is possible.

It is important to visit all potential sources of pollution. The attempt should be made to get the owner in each instance to correct these danger points for personal reasons as well as for water-protection reasons. If the pollution problem existed before the supply was used for water, the utility should correct it. Sometimes it is practical for the utility to give assistance in correcting pollution even though it began after the area became a water supply.

If the property owner will not cooperate, the utility has recourse to the regular enforcement officer. Occasionally the Commissioner of Health fills this need. Often the local utility can bring about a court injunction restraining the owner.

It is important to know in detail the watershed and its boundaries. The U. S. Geological Survey maps are excellent aids. Also, the U. S. Engineer maps and certain aerial maps will be useful. The best time to inspect the drainage area is after a long rain.

The presence of animal manure is not considered pollution, particularly if in a pasturing area. Drainage from washing clothes and washing animals should be prohibited. Dead animals must be buried in 24 hours.

If one is forced to go to court, one should go only as a last resort, and only when he has a good case. One makes a poor case out of a potential danger. It is best to have facts relative to a definite health difficulty.

Too Many Meter Readers in Milwaukee?

THE problem arose because of a raise in pay that the meter readers requested. Requests such as this are forwarded, as a matter of routine, and in this case were handed to Robert C. Garnier, Classification Examiner, and George C. Saffran, Budget Supervisor.

These men decided to see not only what the readers' services were worth but also how the work was organized They concluded that the city does not need its present complement of 40 meter readers, but, instead, needs only 24. This was true, they decided, not because of lack of industry on the part of the readers, but through reorganization of the reading schedules.

They recommended further that no one be "laid off"—that there was ample place for these men in other work in the Water Department. Water Superintendent Herbert Brown, Assistant Superintendent Edward Tanghe, and Deputy Public Works Commissioner John W. Tanghe are in accord with the findings.

As part of the simplification program the department now averages a meter reading every 37 days, billing every three months. It is proposed that residential meters be read every three months, especially in the newer areas, but industrial and most commercial meters be read every month or oftener. Residential meters in the older sections, especially where plumbing leaks are prevalent, are to be read every month but billed quarterly.

The department also proposes post card mailing of bills instead of delivering bills by the meter reader. This will increase the time the meter reader can devote to reading meters.

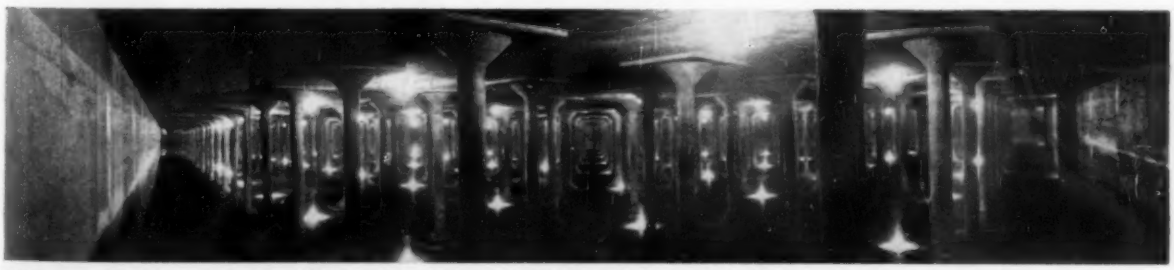
Denver's Capitol Hill Reservoir

JUNE of this year saw the Denver, Colo., Board of Water Commissioners put into service the big 23-mg storage reservoir, an important development in the general water-works expansion program. At some time in the near future the Denver City Park Commission will develop this reservoir area to include tennis courts and other recreational facilities.

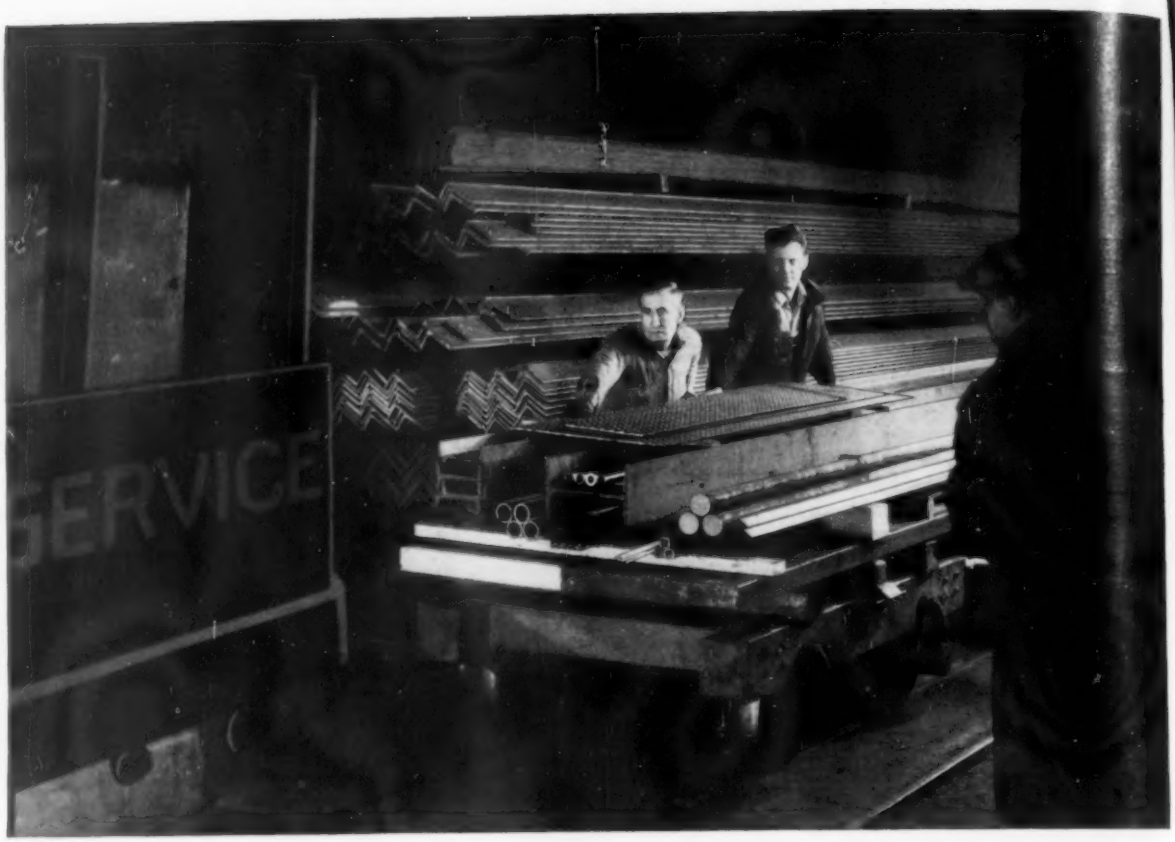
The reservoir, constructed of reinforced concrete, is 462 feet long, 302 feet wide, and 24 feet deep. More than 300 columns 18 inches in diameter support the roof. The roof is 9 inches thick and has a 15-inch dirt cover. The total cost of the reservoir was $765,000.

The water in the Capitol Hill Reservoir comes from several sources. A 54-inch conduit brings water from the Moffat filter plant; a 66-inch conduit comes from the South Platte River, and a 30-inch line brings water from the Cherry Creek infiltration galleries. An average of 160 mgd is used during the summer season. The average winter use is 54 mgd.

The extensive recreational plan and landscaping have been planned by a firm of landscape architects and are now being studied by the Water Board and the City Parks Commission. The plan contemplates tennis courts, park facilities, swimming pool, wading pool, courts for badminton, handball, baseball, and other features.



This unusual photograph was taken inside the new Capitol Hill Reservoir after it was half filled with water. What appears to be the bottom of the pillars is a reflection in the water surface of the top. The picture was taken in sections by H. L. Potts, Denver Water Board.



Steel Hard to Get?

Demand Still Exceeds Supply But . . .

. . . this is a typical view of night loading operations at a Ryerson steel-service plant. The steels specified on several orders are on their way to a loading platform for delivery the following morning. Possibly none of these orders are completely filled—however, the fact remains, we are doing our very best to serve a large group of steel users.

Unfortunately, it often seems that the particular steel *you* want is never on hand, and it is true that we are always short of some kinds and sizes. But our stocks turn over fast. A size that is out today may be in tomorrow. And in spite of current conditions, we still believe the over-all stocks at our thirteen plants are the nation's largest.

Carbon and alloy steels, hot rolled or cold finished, and stainless steel in practically every analysis and finish are in stock, ready for your call. So do not hesitate to get in touch with us —on any requirement. You'll find that every Ryerson steel man will do everything possible to help you get the steel you need, when you need it.

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RYERSON STEEL

Sewerage and Sewage Treatment

Kitchen Grinders— A "Creeping Menace"?

PERHAPS no state board of health in our country has spoken more firmly on the subject of kitchen grinders than has New Jersey's. In this issue we publish a paper delivered by Harry P. Croft, Chief Engineer, and Robert S. Shaw, Principal Engineer for the Department of Health's Bureau of Sanitation, delivered at a recent technical meeting. In the paper they report that 75% of the state's sewage-treatment plants are already inadequate. They further describe the kitchen grinders as a "creeping menace" to the solution of problems of stream-pollution control. In brief, they made these points:

1. That the ground garbage will not cause trouble in well-designed sewers.
2. That the ground garbage will require at least 100% more digestion capacity if their use becomes universal.
3. That the load on oxidation units will be raised by one-third if the grinders' use is widespread.
4. That adequate and satisfactory means of collecting garbage with other refuse already exist.

No Immediate Problem

One can scarcely argue with any of these. Points #2 and #3 are pertinent in covering sewage-treatment plants and stream-pollution abatement. But the significant question is this: When will these additional loadings occur?

One manufacturer states that if the industry sells 10% of the potential market in the next 10 years it will do well. Another manufacturer places this figure at 7½%.

The grinders have been in for the past 15 years. Yet we doubt that there is a single sewage-treatment plant anywhere that can trace an appreciable amount of its load to kitchen grinders.

If responsible authorities admit that 75% of the sewage-treatment facilities are overloaded, then the State of New Jersey undoubtedly has a stream sanitation problem needing immediate action. Domestic and industrial sewage from a growing number of homes and factories create this situation.

To solve it requires construction of treatment facilities adequate for present needs, not banning a useful household device whose effect on sewage treatment will be negligible for years to come.

The bucket empties a load of gravel and sand from the sewer.

Kansas City Cleans Its Sewers

THERE will be faster flows in the sewers and storm drains in Kansas City, Mo., in the future. The Streets and Sewers Division of the Public Works Department recently acquired a Flexible sewer-cleaning machine that has been giving a steady account of itself for the past two months.

The cleaning machine uses two power rigs connected by a cable that passes through the sewer from two manholes. The cable pulls any of a number of buckets varying in size from 6 to 18 inches. One engine pulls the open bucket into the clogged sewer until the bucket appears full. This engine then slacks off and the other pulls the loaded bucket out through the manhole where it is dumped.

The operation is being performed by a crew of four men. To date they average about 2 cubic yards of material a day removed from the sewers. Storm, sanitary, and combined sewers are being cleaned with the new equipment.

The Public Works Department has found that some sewers in the city are as much as 70% filled with sand and gravel. In one instance 12 cubic yards of gravel, cinders, and sand were removed from a 300-foot section of 24-inch main.

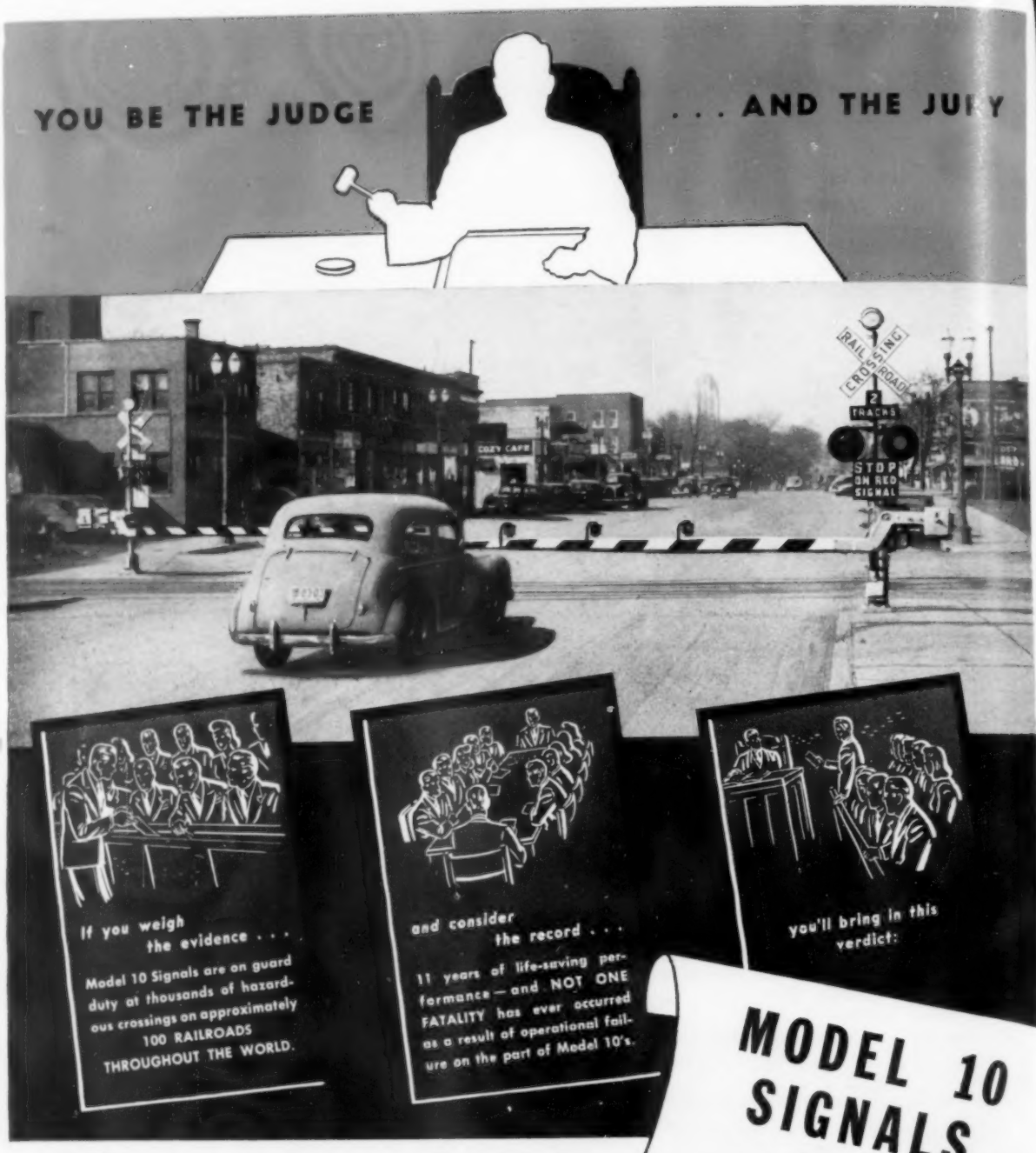
What Has Happened to Operation Costs?

HOW has the present rise in costs affected the operation of plants built prior to the war? Leslie West, Chief Engineer of the Joint Meeting Sewage Treatment Plant in Elizabeth, N. J., gave some insight into this at the recent New Jersey Sewage Works Association meeting held in Trenton, N. J. His study indicates that the increase is leveling off at 40% over the pre-war costs.

Those items over which the plant has no control, such as insurance and fuel oil, have risen 36% and 43% respectively. Maintenance materials and supplies have increased 39% over pre-war prices. Sludge barging, the method the Joint Meeting plant uses to dispose of its sludge, has risen only 5½%. Labor costs have increased 40½%.

The Joint Meeting plant provides primary treatment only, and by virtue of careful design does not have to pump any of the sewage. It furnishes sewage-disposal facilities for 12 communities in Essex and Union Counties. It treats between 35 and 40 million gallons per year. Its operating costs have risen from $108,000 in 1942 to $142,000 in 1947.

YOU BE THE JUDGE . . . AND THE JURY



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Model 10 Signals are on guard duty at thousands of hazardous crossings on approximately 100 RAILROADS THROUGHOUT THE WORLD.

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Write for Bulletin G22—AC11

[1] U.S. PAT. NOS. 2,137,196; 2,362,710; 2,372,579. PAT'D in CANADA 6-27-39

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CERTIFICATE OF MERIT for Safety awarded to WESTERN RAILROAD SUPPLY CO by the NEW YORK MUSEUM OF SCIENCE AND INDUSTRY

Street Construction & Maintenance

Mixed-in-Place Street Surfacing

Mixed-in-place street surfacing still has its place in low-cost construction on good subgrades, for light travel. Here is an Adams grader placing street surfacing on Commerce, Texas, residential streets.

Funds Not Blocking Highway Construction

THE delay in the post-war highway-construction program, involving many municipal expressways, cannot be laid to lack of funds, it was pointed out in the American Petroleum Institute's *Tax Economics Bulletin* for September. A recent statement by President Truman indicated that it will be impossible to spend all the money previously budgeted for federal-aid highway construction during 1949.

The Public Roads Administration blames the slow progress of highway construction on unstable costs. Commissioner Thomas R. MacDonald has stated that 40% of the projects ran over the contract time and the delays were largely attributable to shortages of materials, equipment, and labor.

Salt Gains Favor For Snow-Removal Work

THE use of salt appears to be finding increasing favor by city officials for snow-removal work. A recent report by the American Public Works Association, recorded in its August *Newsletter*, gives the experience of seven cities with a population over 20,000.

Philadelphia, experimenting with pure salt last winter, found that salted snow banks could be lifted without being loosened with picks, just as the streets could be kept clean without continuous scraping.

Irvington, N. J., found that salting all main arteries, hills, and intersections was a welcome relief from putting down a "sandpaper street." The entire operation was faster and more efficient, and eliminated much of the cost of cleaning streets, gutters, and catch basins in the spring.

Sand and Salt

Royal Oak, Mich., reported successful use of sand alone for quick action in weather above 20°F. For lower temperatures they use salt with a small amount of sand to work as an abrasive to aid until the salt begins to work.

Buffalo, N. Y., and Portland, Maine, have found that pure salt works best on thin icy sheets covering pavements, but that heavy snowfalls or thick icing required salt and sand. The salt alone tended to bore through the heavy snow or ice without breaking it. The surface then became glazed and slippery.

The APWA summarizes its findings by recording that salt has these applications:

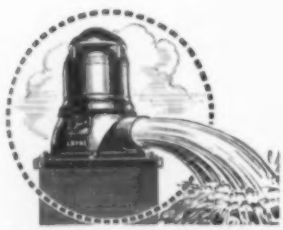
1. Over 20°F. on snow and thin ice, to produce a bare pavement.
2. Over 20°F. on heavy snows, should be distributed at the beginning and end of the storms. Will keep the snow easy to handle.
3. Under 20°F., salt should be mixed with sand. On this point some do not concur. They feel that for quick action calcium chloride and sand should be be used.

Digging In at Taylor, Texas

For those areas in every city that do not yet have all-weather surfacing, a little trimming of the ditch line is required periodically. This shows an Adams motor grader at work at this task in Taylor, Texas.

Higher Production LOWER OPERATING COST

TWO outstanding features of Layne Well Water Systems are—Higher Production and Lower Operating Cost. These advantages are the result of excellence in engineering design, plus the proper methods of installation. Such features are of utmost importance in all situations where ground water is used in large quantities: cities, factories, chemical plants, railroads, packing houses, steel mills, refineries, etc.



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But Layne is not satisfied to offer higher production and lower operating cost alone. There is the matter of dependable quality and substantial construction. Not once in nearly seventy years of Layne operation has quality been lowered. Today, your Layne Well Water System is better than ever before; tougher where wear is heaviest, more rugged where strength is needed and finer machined for accuracy and smoother operation.

For the best that skill and care can create, plus top flight and proved efficiency at low operation cost, insist on a Layne Well Water System.

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For further information about Well Water Systems or Vertical Turbine Pumps, request catalogs, bulletins, etc. No obligation.

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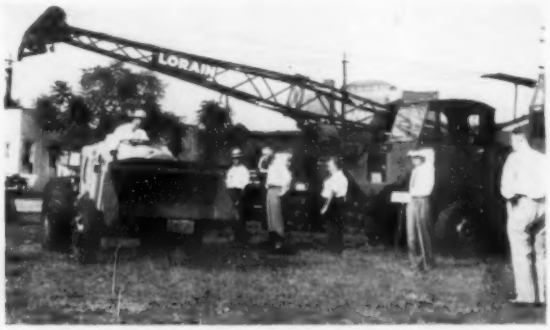
Street Cleaning and Refuse Disposal

A Gar Wood truck-mounted catch-basin cleaner.



A Hough loader and a Lorain Moto-Crane.

Public Works Men See New Equipment

PUBLIC Works men in the New York Metropolitan area saw a new catch-basin cleaner make its official debut at the American Public Works Association Metropolitan Chapter meeting in Bloomfield, N. J. The new, fast-moving unit, a product of the Silent Chain and Hoist Co., Brooklyn, N. Y., is an adaptation of this company's handy Krane Kar and uses a Hayward orange-peel bucket for the digging. The operator very skillfully showed how he could drop the bucket into the catch basin and quickly remove it, transferring its load into the truck.

This unit was contrasted against the Gar Wood catch-basin cleaner, a self-contained unit with the hoist mounted on the truck. The Gar Wood unit, also equipped with a Hayward bucket, loads its own truck body.

The consensus of the men present was that the new Krane Kar catch-basin cleaner would be particularly useful to the larger cities that could organize a fleet of trucks for the cleaning. This one machine could very easily keep several trucks busy. The Gar Wood truck-mounted cleaner could also serve the smaller communities that would not embark on such a detailed program. Here it would be to advantage to assign a two-man crew to the job and let it clean and dump its own load.

Explosive-gas detection also came under examination by the Bloomfield meeting. In a formal paper, Mr. F. R. Davis, of the Davis Emergency Equipment Co., Newark, N. J., explained how the explosive-gas detector works and how it could be used to make work safe in sewers, manholes, etc.

Kitchen garbage grinders also came under scrutiny in a discussion led by F. J. Roney of the General Electric Co., Bridgeport, Conn. Questions from the floor covered the effect of the grinders on the sewers and sewage-treatment plants.

Mr. Roney stated that the sanitary engineering profession seemed more confident of the acceptance of these devices than his own organization. He quoted company estimates that if the industry could reach 10% of the market in the next 10 years then it would be well pleased. This load, he pointed out, would be so slight that it would scarcely be felt by the system.

The Public Works men also visited the Westinghouse factory and laboratory in Bloomfield. At the laboratory they were able to inspect a demonstration of street lighting.

Tom Sherman, Bloomfield City Councilman; Percy Sprague, Director of Public Works, Valley Stream, N. Y., president of the local APWA chapter, and Allan Rogers, Director of Public Works, Garden City, N. Y., a national director of the Association.

Attention was generated by the fast-operating Krane Kar with its orange-peel bucket for catch-basin cleaning.

PROTECT THE CITY

Delayed Alarms Increase Fire Waste

GAMEWELL FIRE ALARM BOXES

Adequately distributed throughout the city — one at every fire hazard — provide the means for eliminating Delayed Alarms and consequent fire waste.

Delay, not the incipient fire, causes the greatest loss. Fires extinguished in their incipiency result in nominal losses and small water damage.

In congested districts a box should be plainly visible from the main entrance of any building . . . any building in built-up residential districts should be not more than 500 feet from a box and in sparsely built districts, the distance should not exceed 1,000 feet.

We invite your inquiry.

THE GAMEWELL COMPANY

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IN CANADA: NORTHERN ELECTRIC COMPANY, LTD., MONTREAL

Public Safety

Tuscaloosa, Ala., Gets New Equipment

A YEAR ago we purchased a Gamewell fire-alarm system with 109 boxes, of which 17 are master boxes. We also bought 73 auxiliary boxes to install in our schools and some of the business houses in the high-value district. A new fire-alarm-system headquarters building has been erected at the rear of fire headquarters.

Heretofore, we had to depend on telephones. At night in some of our Negro sections where they don't have very many telephones, people had to run half a mile or more to the nearest telephone. By the time they awakened the owner and turned in the alarm, the building was a total loss. Had there been a fire-alarm box within two or three blocks we could have responded to the call and had water on the fire in less than half the time it took to go to the nearest telephone.

We have also had fires in our uptown high value district as well as in our industrial section where the alarms were delayed by not having boxes.

The University of Alabama is within our city limits, and its protection against fire is one of our responsibilities. With the help of some of our state officials and the Alabama State Firemen Association we persuaded the State and the University to build a new $40,000 Training Fire Station on the Campus. The State Department of Education bought the school $30,000 worth of equipment, including one 750-gallon-per-minute pumping engine and one Chevrolet truck with a 500-gallon front-end-drive Barton pump. The city furnishes 10 regular firemen, and we work 12 students as extra firemen at the Station under my supervision. The Alabama State Fire School is held here each year. Starting here in 1940 with 31 students, the current attendance is 128. University Station takes care of its part of the town and is called to other parts when needed. The University has also bought several fire-alarm boxes which are hooked up to our system.

In 1947 our city bought a 750-gallon pumper. With this new truck we have six pumping engines: one American-La France 1,000-gpm, four 750-gpm (2 ALF and 2 Seagraves), and one 500-gpm. They carry five Indian fire pumps. Now with our new fire-alarm system we think we can do a first-class job.

E. L. MATHEWS
Chief, Fire Dept.
Tuscaloosa, Ala.

PHOTO COURTESY OF INDIAN MOTORCYCLE COMPANY

"It's for you—my brother the Mayor."

Few Flies in Columbus, Nebr.

OUR city conducted a fly-control campaign the week of July 6 to 11. We asked the citizens to spray their garbage cans, windows, shrubbery and other infested areas with 50% solution of DDT. Our garbage collectors cooperated by handing to every housekepeer a card which reads as follows:

FLY CONTROL CAMPAIGN

I, too, am cooperating in the Columbus Chamber of Commerce drive to rid our city of disease-bearing flies. Flies are dangerous, and the bad part of the polio season is near. I urge you to spray your garbage can and any other dangerous area with DDT to cut down the fly population and make our city cleaner and healthier.

Your Garbage Collector

. . . . . .

To those of you who have already accomplished the above, we say

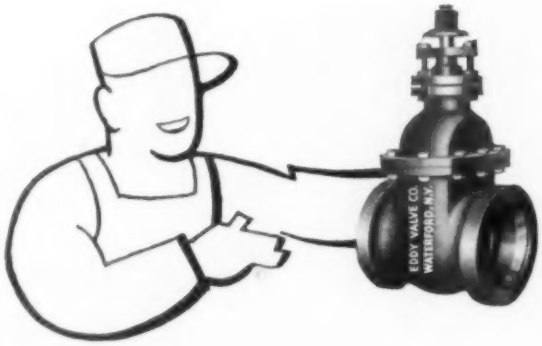
THANK YOU

Public Safety and Health Committee,
Columbus Chamber of Commere.

Our agriculture society sprayed its fair grounds and also the horse barns. The city sprayed the sewers and city dump. The merchants were asked to spray their part of the alley behind their stores. Nebraska has had hundreds of cases of polio, many in counties surrounding our own. To date, the City of Columbus has not had one case of polio and only one case has been reported within the county.

Fly control includes the spraying of garbage cans.

JOHN T. HAY, *Manager*
Chamber of Commerce
Columbus, Nebr.



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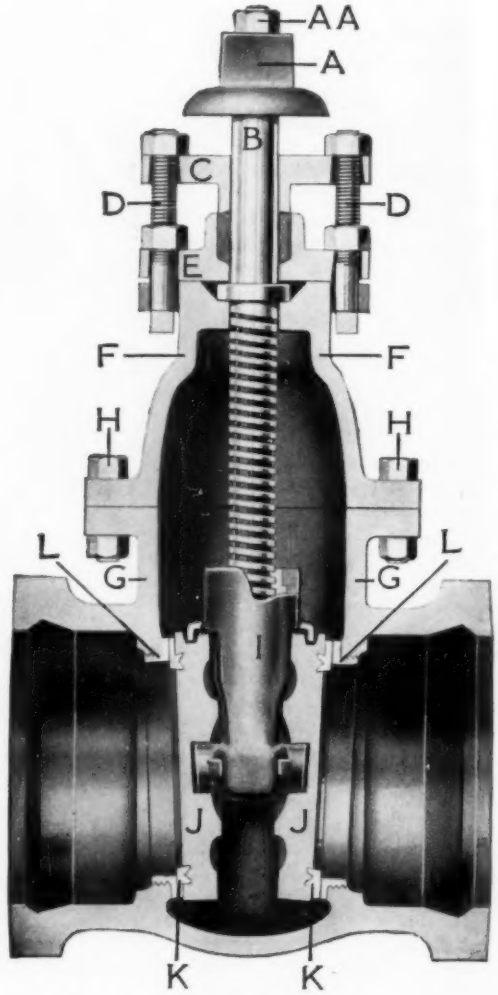

AA Stem Hold-down Nut
A Stem Operating Nut
B Stem
C Follower
D Follower Bolts
E Stuffing Box
F Cover
G Body
H Body and Cover Bolts
I Ball
J Gate
K Gate Ring
L Seat Ring

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Airports and Aviation

Airport Construction Highlights

FAITH in the continuing growth of aviation is evident from the reports of aviation work reported by the American Municipal Association. They found:

Miami, Fla., has approved plans for a $3,000,000 terminal and international hotel at the airport. The 150-room sound-proof hotel will provide complete facilities for handling international travelers, including currency and export-import control offices. Revenue bonds will finance the project.

Salt Lake City, Utah, is extending runways and installing high-intensity lights. In the future the largest commercial planes will be able to land and take-off with larger payloads.

Portland, Ore., is making runway and apron extentions to form one of the largest airfields in the country. There also are included plans for a new post office, administration building, and restaurant.

Philadelphia, Pa., is going ahead fast on a $10,000,000 program; work on four hangars capable of housing the largest aircraft in commercial operation, and 32 hangars for twin-engine planes. Construction of the new administration building will begin soon.

Richmond, Va., is constructing a new $692,000 administration building.

Jets No Threats To Airport Runways

THERE still is no need to expect that jet engines will cause asphalt runways to melt and flow down the drain or will blow concrete runways off the subgrade, according to W. R. Macatee, manager of the airport division of the American Road Builders' Association. (Recent reports in the technical literature have indicated that fuel drippings will soften the asphalt runways unduly and will cause damage to the concrete expansion joints in these areas.)

Fuel drippings troublesome now to jet engines, will not be a factor in the future, Mr. Macatee states. Reports that he has from engine manufacturers indicate that in the forseeable future technical advances in engine manufacture will eliminate this wasteful fault. In any case he states that protective coatings of tar, or other proprietary material such as Jennite, can be used on warm-up aprons or maintenance areas.

Heat from the jet engine tail-pipe has been quoted as an example of a source of damage to asphalt surfaces, because the engine tail-pipe is believed to be placed at an angle with the horizontal. Present tail-pipe designs, Mr. Macatee states, are approximately parallel with the pavement surface. And the temperature from the jet soon drops to reasonable figures by the time it radiates to the pavement surface.

What About Impact Stresses?

THEY have been badly overrated, in fact they don't exist at all, according to a study reported by W. R. Macatee, manager of the Airports Division of the American Road Builders' Association, and concurred in by the Civil Aeronautics Association. At one time some engineers proposed the design ratio of 3.25 to represent inpact-weight of a plane at landing. This was used against a factor of 1.00 when the aircraft assumed a static position. Subsequent studies have proved this false.

Rather than treating landings of aircraft as harmful to runway pavements, the Civil Aeronautics Administration's new design manual points out that the static or standing load of an airplane is its greatest load. It states that because aircraft are partially airborne when taxiing and largely airborne when landing, the dynamic and impact loads are less critical than the static loads. It points out that for this reason pavements designed for static loads will be adequate for all loadings.

As has been well known to designers for some time, taxiways need greater strength than the runways themselves. If taxiways serving 90,000-pound gross loads are to be surfaced with the flexible bituminous types of pavements, the thickness of their surface courses remains the same as those which cover the runways. But, as in the case of concrete, the total thickness of taxiways is made greater than adjoining runways. When flexible pavements are employed, the added thickness required in taxiways is installed in the form of 2 additional inches in the base course underlying the asphalt surfaces; and 2 more inches are installed in the subbase over which the base course is placed when the gross plane loads are to be 90,000 pounds. Thus taxiways are usually 4 inches thicker than the main portions of runways when bituminous materials are used.

The exception to this general rule occurs when bituminous pavements are installed on subgrades consisting of soils having higher-than-usual supporting power. In such cases, the greater thickness required on taxiways is limited to 2 additional inches in the base.

LaGuardia's "Death Corner"

LAGUARDIA Airport's "Death Corner" landed in the news columns recently in the course of disagreements between the New York Port Authority, operating the airport, and the airlines using it. The corner is on a road that skirts one of the runways and interferes with plane landings. It has been used as an airlines' service road.

Port Authority officials have closed the road and relocated it. The airlines list the relocation as a part of a "deliberate course of persecution and harassment." Port Authority officials point to the accidents and potential threat of accidents as ample reason.

This was part of a series of complaints made by the airlines about the operation of the port. Among others was the assertion that rates were "unreasonable and burdensome." Port Authorities quoted similar assertions by airlines in other cities and the practices of cities such as San Francisco, Minneapolis, and St. Paul in putting the airports on a self-supporting basis. Flight revenues, the Port Authority stated, should return not more than 30 to 40% of the cost; the balance of the revenue comes from non-airline sources.

A plane approaches the controversial "death corner" at LaGuardia airfield.

GREATER EFFICIENCY AND ECONOMY

Get both by lubricating your compressors with Texaco

Photo courtesy Joy Mfg. Co., Sullivan Division.

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For compressing wet air, use *Texaco Regal Oils (R & O).* They give full protection against rust formation — even during idle periods and in intermittent operation.

To make your drills last longer — run more efficiently and economically — use *Texaco Rock Drill Lubricants EP.*

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NOVEMBER 1948

Volume XLIII No. 11

The American City

Special Operations That Aid Fire Fighters

New York City's No. 1 Rescue Squad

By FRANK J. QUAYLE
Commissioner
New York Fire Department

THE New York City Fire Department has five rescue companies, the fifth having been established on Staten Island (Borough of Richmond) only this year. The first company, organized in 1915, was the world-renowned Squad 1 at Lafayette and Spring Streets. The purpose of its organization was less for rescue than to train men and provide special equipment to aid in actual fire-fighting operation. The trend was toward in-fighting, getting as close as possible to the fire, where it can be given direct blows.

Meanwhile, the city has become more complicated, with values rising, the transportation system extending, and an increasing use in industry of chemicals, gases, and plastics. The purpose of the rescue company was to carry not only the hundred and one tools, each of which sooner or later becomes the vital one, but above all, resourcefulness. In this kind of a rescue company, it's the quality of the men that produces results. It's ingenuity and hardihood, the ability to improvise in the face of a new catastrophe. Possessing the faculty for doing each job in the simplest and quickest successful way makes the use of the complicated, larger, or delicate safety equipment most effective.

Better-Than-Average Men

The first requirement is that the candidate be a good fireman, hardy and able to take it, with a good record and character. These can be determined, because all candidates for New York's rescue companies are volunteers from the uniformed service.

From time to time a special order is sent to fire headquarters requesting volunteers for a squad. After answering a questionnaire, these men are sent to the medical office for a special physical examination. Big men are not the objective. In fact, a rescue company carries two or three small men, the same as they carry small tools for working in close quarters. The men accepted are taught to obey, which is essential to preserving their own lives as well as rescuing others. They are not rushed in the use of equipment or out on calls. Within 30 days, however, they have usually been signed up, or perhaps they have begun to wonder why they ever left the routine of the ordinary fireman.

A very valuable asset is a trade. Squad 1 has riggers, plumbers, steamfitters, electricians, sand hogs, and iron workers. They instruct one another, and after a while the whole crew knows something about all those trades.

Special Equipment

Just as the most complete assortment of safety equipment is largely wasted without resourceful as well as mechanically competent men, so these men's efforts would often be largely wasted without adequate equipment. Providing the men with such equipment develops confidence and speeds operations. Dangerous gases and poisonous fumes lose their terrors when the right masks are available and when their uses and disadvantages as well as virtues are thoroughly understood. Over-confidence must also be guarded against, as it pointed out by a special order directing that the judgment of the rescue company officer, and not of the chief officer at the fire, shall determine whether or not an entry shall be made.

The work of such a company goes beyond the common idea of lifesaving operations. While there is the usual measure of minor calls, its basic purpose is to act as a skilled aid to the fire fighters. Chemical plants must be entered and ventilated. Refrigerants must be shut off. Certain special equipment may be needed infrequently, but it is essential when the occasion does arise, as when chemical fires occur, where sub-basements contain hazard-materials, and when steel doors and shutters must be removed.

New Rescue Truck

In March, a 10-ton enclosed Mack truck with specially designed body replaced the truck that had served since 1940. The older truck was sent to Squad 4 in Queens, whose truck in turn went to the new No. 5 Squad established in 1948 in Staten Island. The interior of the new truck features aisle space, good lighting, and dead-front equipment compartments.

Chief dependence in resuscitation cases is placed in the Clark inhalator which supplies either continuously (for the unconscious) or on demand (when breathing starts) a mixture of 93% oxygen and 7% carbon dioxide, known as carbogen. This inhalator can treat two victims at the same time.

For many years, the chief reliance was the MSA Burrell All-Service canister mask, and it is still carried by virtually all lifesaving trucks. The breathed-in air passes over 17 trays (the canister) which eliminate 98% of all gases in the air except ammonia, 97% of which is eliminated. A timer shows when the canister is used up, and the canister is discarded at the three-quarter mark. The mask is used in conjunction with a miner's lamp to make sure that at least 16% oxygen is present in the air, compared with the normal 21%. This mask gives service for two hours against carbon monoxide not over 2%. It is of light weight and easily adjusted. Its limitations are, as stated, that it cannot be used where oxygen is below 16%, and the 2-hour life of the canister, which must be discarded in any event after one year's service.

Since the war, a new type of mask

has proved extraordinarily successful. It is the Scott Air-Pak, carrying its own air at 2,000 pounds' pressure. In use, the supply of air lasts one-half to one hour. This mask eliminated the use of chemicals and the necessity of breathing heat, as the breath is exhaled into the air; it also improves vision. It is first choice in areas deficient in oxygen, having concentration of irritant or toxic gases, and, with diving shoes and weighted belt, it can be used under water to a 30-foot depth. The equipment provides respiratory protection in any atmosphere, whether poisonous or deficient in oxygen.

As with all other masks, the protection does not extend to gases which are taken through the skin, such as hydrocyanic acid gas, used in rat control and as a fumigant. Where hydrofluoric gas is present, the glass windows of the mask should be covered with white vaseline or grease.

Experienced rescue-company officers say that every mask has some inherent limitations. In training, each limitation is brought to the attention of the wearer in as startling a manner as possible. The disadvantage is a condition, as indicated above, not a mechanical defect, and he must understand it fully in advance so that he will not encounter it for the first time at a fire. He is taught that, masked, he is in a strange little world by himself, and that apprehensiveness, nervousness, and hard breathing cut down the time which the mask allows a confident wearer, whether 850 feet up in the Empire State Building or 150 feet under the East River.

The speed of the oxyacetylene-cutting torch makes this a valuable tool in cutting through bulkheads or the side of vessels, cutting steelwork in a building collapse, releasing victims caught in elevators, and freeing workmen from boilers.

Jacking equipment can move heavy cars and elevators and can force doors blocked by materials on the inside.

The new truck carries a fully equipped first-aid bay for the use of doctors as well as for members of the squad. The range of equipment is indicated by the fact that a tracheotomy (cutting a windpipe and insertion of a tube) can be performed in a severe case of asphyxiation where muscle collapse has occurred.

In Action

● On New Year's Eve, a commercial building on Broadway collapsed during a fire. The seven stories fell into the cellar and trapped 21 firemen. Seventeen were quickly located and rescued; the other four were almost hopelessly buried against the north wall, halfway between the first floor and cellar. To reach them, it was necessary to use pneumatic drills to break through the exterior wall of the adjoining building and north of the collapsed building. The opening had to be shored with jacks to prevent further collapse, which would have endangered the lives of the rescuers. Inside, great care had be exercised to prevent slides. Duff-Norton trench jacks were used to hold the rubble in place. Then, using other jacks and saws from keyhole to two-man timber size, the men were extricated and removed. Two of the firemen died.

● Five firemen were trapped in a cellar flooded from hose streams. Four of the five were rescued; the fifth drowned. All four were revived, one after 4½ hours, by artificial respiration and the Clark inhalator. Six of these two-victim inhalators are carried by the truck.

Equipment for Combatting Normandie Fire

● Perhaps the classic case of the use of oxyacetylene cutting equipment occurred in the second fire that destroyed the S.S. *Normandie* in April 1942. On leaving France, metal covers had been welded over all the portholes. In order to reach the fire, these covers had to be cut out from the stateroom windows. As the ship was lying on her side, the men were bow-lined on a bight knot (legs through loops in the lowering rope) and lowered down the side with five KG commercial-sized oxyacetylene sets. Many of the plates were red hot, and water had to be poured down the side to keep the acetylene lines from burning. Squad 1 performed the entire job in 4½ hours, when cellar-pipe distributors were put through the portholes and water was poured in.

Meanwhile, as a precaution, two fuel-oil tanks on the deck, some 40 feet above the pier floor, needed to be provided with a water seal. To do this required cutting openings. Men with oxyacetylene outfits were placed in working position by two aerial-ladder trucks on the pier floor. The two trucks were pointed toward the cargo runways. Then, inside the pier, the aerial ladders were turned around so that they pointed out over the driver's seat. The trucks were then driven as close as possible to the edge of the pier, so that the ladders extended through the cargo doors. With the men on them, the ladders were raised to positions where the openings would be made.

● Probably the most conclusive test ever given self-contained breathing apparatus was at the Brooklyn-Battery Tunnel fire on May 14, 1947. The fire was in a group of storage batteries on an electric locomotive, 110 feet below the surface and 150 feet east of the Manhattan bulkhead. Before entering the tube, three rescue firemen and a tunnel engineer were compressed to 25-30 pounds of pressure in the man lock. Masks were then adjusted, and the door from the lock to the tube was opened and blocked open by a 10-by-10-inch timber. The Air-Paks protected the men fully from the sooty smoke and fumes from the battery fluid. The fire, especially intense because burning in compressed air, was finally extinguished by a 1-inch line coupled onto the 1½-inch line of the 3-inch tunnel water pipeline.

● The value of resourcefulness is illustrated by measures taken at a cosmetic house where a violent explosion wrecked the rear end of the first floor. The fire had burned off two rubber lines from two 100-gallon elevated tanks containing a flammable liquid. A foam line blanketed this flaming liquid fire for a minute, and two members of Squad 1, with asbestos gloves, put two 3-inch pipe caps on the ends of the open lines. The resulting extinguishment was simple routine.

Chief of Staff and Operations Frank Murphy, for years Division Commander of the Second Division in which Rescue 1 is located, is thoroughly familiar with the necessity of protecting firemen in hazardous atmospheres. It was through his efforts that the Scott Air-Pak was accepted after numerous tests in actual fire fighting. Chief Murphy's interest has been backed up squarely by my own recognition that the best in men and facilities is none too good in rugged fire-department rescue operations.

Essential Tools

Selecting men is difficult under any circumstances. Selecting men to work where life is at stake is more difficult. But, given a strong, alert, resourceful crew, what are the most important principal tools to provide? Asked what he would carry if he might have only ten of these, Captain Patrick Green of New York's Squad 1 selected the following devices:

- Self-contained breathing apparatus
- Adequate inhalation and first-aid equipment
- Oxyacetylene cutting outfits
- Jacks, rigging, and shores
- Rubber clothing for personnel protection
- Pavement-breaking tools, power-operated
- Adequate set of miscellaneous tools from ½-inch pipe cap to 3-foot Stillson wrench, electrically-operated saws
- High- and low-pressure fog nozzles and applicators for protection against heat and smoke as well as for extinguishment
- Adequate portable-floodlight equipment
- Communications with which to establish field headquarters.

Electric Unit Heaters Have Many Municipal Uses

SINCE electric unit heaters completely eliminate the need for a central heating plant, pipelines, and maintenance men, they are becoming increasingly popular in solving many difficult heating problems.

They are used by some cities for buildings which need heat only one or two hours a day, or one or two days a week, and for heating temporary buildings. Others use them for heating buildings remotely located from the heating plant, and for auxiliary heat where the main source is not adequate during certain times of the year. In cities located in mild climates, where only a little heat is needed for short intervals, electric unit heaters are the ideal answer for many heating problems.

In Kansas City, Mo., electric heaters were installed in four stations housing emergency flood pumps, replacing coal stoves which had been fired three or four times a day in cold weather. City officials estimate that decreased operating costs will permit the electric heaters to pay for themselves in three years. Operation of the heaters costs nothing, since the city is charged for peak load, and heaters are so connected that current is cut off when pumps are operating. As floods occur only in mild weather, this causes no inconvenience. Also, the electric heaters provide much cleaner heat than the coal stoves.

Some 40 electric-unit heaters were installed in the repair shops of the Department of Water and Power, Los Angeles, Calif., to keep the various buildings at a comfortable working temperature during the brief periods of cold weather in Los Angeles. At Baltimore, Md., unit heaters were installed in municipal comfort stations which were remote from sources of steam.

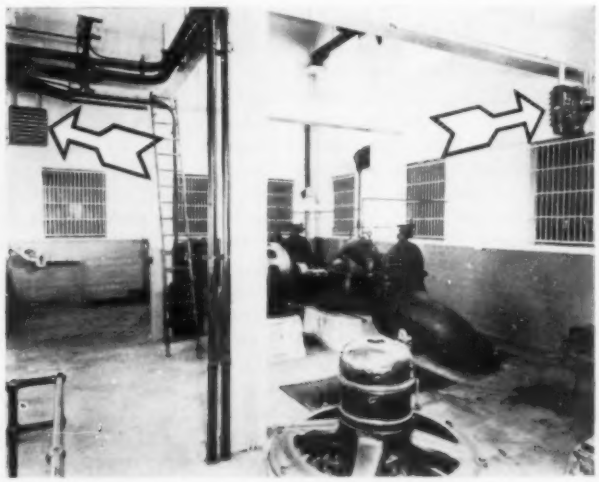
A number of New York City departments use them. For instance, the Department of Water Supply, Gas & Electricity uses them where there is a monthly minimum charge, in isolated plants without attendants, and where gas service is not available. Unit heaters are especially applicable for use in large rooms. A 10-kw heater is suitable in a room 20 by 20 feet by 15 feet high and has a "throw" of 30 feet. Four pumping plants in Staten Island have been heated by 10-kw unit heaters since 1936, with only minimum maintenance. Ten water pumping plants in Queens Borough are similarly equipped.

A recent installation of unit heaters was made at the chlorine plant of Hillview Reservoir, Yonkers, N. Y. The storage room has to be kept pretty warm. It is 28 by 60 feet by 20 feet high, and six 15-kw electric heaters were installed in 1946. These provide the equivalent of 1,200 square feet of radiation. In addition, and to augment the steam heating system, four 9-kw electric heaters were installed in the office, pump room, and chlorine pump room of the plant.

The foregoing uses indicate the place of electric heating in municipal operations. Its special attractions in warmer climates and in municipalities owning their own electric distribution system are clear. The convenience of electric heating is almost unanimously conceded. It requires no central heating plant, pipelines, banked fires, caretaker, or fuel and ash handling.

◀ Two of the 40 electric unit heaters installed in the repair shops of the Department of Water and Power, Los Angeles, Calif. The heaters maintain a comfortable working temperature in the buildings during the brief periods of cold weather encountered in Los Angeles.

▼ Electric unit heaters in four emergency flood-pump stations cause large savings in operating and maintenance costs, according to Kansas City, Mo., officials. (Photos courtesy of ILG Electric Ventilating Company.)



Is Public Housing Needed For Urban Redevelopment?

Redevelopment authorities and planners from several cities present their views on this important question

Los Angeles

By CHARLES B. BENNETT
Director of Planning

IN MY opinion, the lack of available public housing facilities in our city and the lack of funds with which to build additional subsidized rental units are going to be a definite deterrent to any large-scale redevelopment activity in the City of Los Angeles.

However, low-rental housing is not the only roadblock to progress in our town. First, any acquisition of a blighted area, as things stand now, would have to be financed by the city. This would mean a publicly approved bond issue.

Second, the California Community Redevelopment Act does not permit the writing off of more than 50% of the cost of acquiring the site when it is turned over to private enterprise on a lease or sale basis for redevelopment.

Third, in a rough analysis of a particular project site, we find that even if we were able to make the site available to the private developer at no charge whatever, the present-day building costs would not permit the construction of dwelling units to rent for less than $75 to $100 per unit, depending upon the number of bedrooms. The greatest need for rental housing in Los Angeles is among families who are unable to pay more than $50 to $75 per unit. Unless the cost of construction comes down, it looks as though the only kind of residential redevelopment we can do in Los Angeles would be that which is out of reach of the vast majority of families who need housing the most.

The California Community Redevelopment Act definitely requires that local authorities satisfy themselves that adequate housing at comparable rents is available or will be made available for those families who are to be displaced on a redevelopment project site. Most of these families, according to our surveys, can't afford to pay much more than $25 to $35 per dwelling unit. There are no facilities presently available for these families elsewhere in the city.

In some quarters, it is stated that we are rapidly catching up with the housing shortage and that when there is a sufficient quantity of housing available, families will be leaving some of the older neighborhoods, thus making that housing available for families of low economic status. If that ever does happen, it will be a long, long time in the future. Currently, therefore, I feel perfectly safe in saying that of all the obstacles aforementioned, the one with which I think we will have the greatest difficulty is that of taking care of displaced families.

Chicago

By D. E. MACKELMANN
Acting Housing and Redevelopment Coordinator

OUR Chicago redevelopment program is based upon the assumption that "without public housing, urban redevelopment cannot proceed." The General Assembly of the State of Illinois followed this principle in the legislation passed in 1947. State appropriations were made for public low-rent housing.

The City of Chicago has proceeded on the same principle. It was the special urgency of Chicago's needs which caused the Housing Action Committee, appointed by Mayor Kennelly, and the City Council to go beyond the mere matching of state funds for the purpose of building low-rent relocation housing.

The Chicago Housing Authority will receive $3,300,000 in state grants. Last November a city bond issue of $15,000,000 was approved by the voters. The bonds have since been marketed, so that now more than $18,000,000 is available for the construction of low-rent relocation housing.

This housing, to be built by the Chicago Housing Authority, will be occupied by low-income families now living in clearance areas.

We are now experiencing difficulties in meeting the problem of relocating families from areas to be cleared for public and private non-housing projects. A considerable delay is occurring in a number of projects for which funds are available. That holds true for the superhighway program, and for the programs of the Medical Center Commission and the Illinois Institute of Technology as well as for Michael Reese Hospital. We are facing the same problem in connection with the proposed hospital of the U. S. Veterans Administration.

By IRA J. BACH, *Director of Planning Chicago Land Clearance Commission*

THE state-aided, Chicago slum clearance and redevelopment problem envisioned the need for public housing for relocation of the low-income families residing in clearance areas. Under this program, the Chicago Housing Authority will receive approximately $18,000,000 for the construction of permanent dwelling units for rehousing displaced, low-income families. In addition, the Chicago Land Clearance Commission will receive approximately $26,000,000 for the clearance of blighted areas, together with the subsequent sale to developers for redevelopment to be financed by private capital.

It, therefore, seems to me that the state-aided Chicago program has the necessary machinery with which to start the job. Whether or not it is adequate in size is another question that will have to be answered in the near future.

Detroit

By GEORGE F. EMERY
Director of City Planning

OUR Master Plan calls for the redevelopment of many hundreds of acres of blighted residential property for both residential and industrial use. These blighted areas are now either slums or near slums. They are generally occupied by the lowest-income groups, largely on a rental basis. The rentals paid in these blighted areas are in the lowest groups to be found in the city.

We have one redevelopment project now under way. That is, the substandard area has been approved by the city for acquisition for slum clearance purposes under the Housing Commission law. After acquisition and clearance of the site, it is proposed to replan the area and sell parcels, blocks, or the entire area for private redevelopment. Some money has been appropriated to pay for acquisition, and the condemnation suit has been actually entered in court. However, the proceedings are now held up by a test case which is

questioning the legal validity of this method of procedure.

So we have not reached the point where it can be said that the shortage or lack of adequate public housing facilities is now an impediment to our urban redevelopment program. However, the housing shortage is extremely bad, and this is particularly so with respect to decent low-rent housing and housing available for Negro occupancy. If our redevelopment project had reached the point where clearance could be considered, I think its progress might be materially delayed by the housing situation. It is quite probable that the clearance of the redevelopment area would need to be coordinated with the tenanting of several authorized but as yet unbuilt public housing projects. Otherwise, the clearance could probably proceed only on a block-by-block basis or be held up indefinitely until the housing situation has sufficiently eased.

Lack of Public Housing as an Obstacle to Redevelopment

At this time, we should be concerned primarily with overcoming the hurdles to the first effective demonstrations of "urban redevelopment." This means to me that we are aiming at construction of the pilot projects which show in concrete form the benefits to be derived from redevelopment. While as philosophers we may discuss the whole field of redevelopment at a conference, as officials of operating city departments we do not face immediately all the hurdles and problems involved in all business and industrial area rebuilding and to social rehabilitation.

possible varieties of improvement projects.

I do not mean to say that the problems outlined in the August 1948 article are not in existence in some or all American cities, but I do contend that the first effective projects can be built without running into the whole line of high hurdles.

It is in this sense that I would say that the redevelopment program in Providence is not being held up by a lack of adequate public housing facilities. A program is being shaped which recognizes this lack; but also recognizes the lack of an adequate housing supply at all levels of rental value. It is true, of course, that in Providence we can develop projects in arrested subdivisions which is not permitted by legislation in some cities. As a result, we do not have to displace large numbers of families to initiate projects which will provide some of the new housing needed before we can clear our run-down areas.

A reservoir of public housing available for displaced families would greatly speed redevelopment progress and broaden the possible program. In time, such a reservoir of housing will be necessary, but in Providence we are not being prevented from taking positive action by the lack of this supply.

New Towns—The Dramatic New Approach

I object to this principle as stated by the editors of THE AMERICAN CITY for three reasons:

1. It is not capable of general application.
2. Rebuilding the central city is pictured as a sterile act without dramatic appeal.
3. It is implied that the urban redeveloper should assume the duties and responsibilities of the urban planner.

1. Perhaps Providence is the exception which proves the rule, but I would venture to say that outside the few great metropolitan concentrations there are many cities where the building of new towns would not be feasible or even desirable. There is probably a need for "new towns" to care for displaced families in the New York and Chicago areas where "urban redevelopment" projects are being planned in terms of thousands and tens of thousands of families. But in Providence—we are planning projects in terms of tens and hundreds of families. Commuting time from our most distant "bedroom town" is thirty minutes, and most of the adjacent cities and towns have substantial "decentralized" industrial plants.

2. Without attempting to criticize or defend the population concentrations of Radio City or Stuyvesant Town, these examples of rebuilding the central city are to my mind fully as dramatic as

How High Are the Hurdles?

SEVERAL readers of THE AMERICAN CITY questioned its approach in the article, "Urban Rebuilding Plans Face Many High Hurdles," which appeared in the August issue. It was the belief of one reader that surprising progress has been made in urban redevelopment thus far, and that there is no great need for a dramatic new approach to mobilize public interest and support. He challenged the assumption that "without public housing urban redevelopment cannot proceed," and declared that he knows of no redevelopment program actually being held up because of the lack of public housing.

To get the facts, THE AMERICAN CITY wrote to several municipal officials concerned with redeveloping slums and blighted areas. The letter pointed out that there are bound to be individual interpretations of the phrase "urban redevelopment" and its meaning, and that some may even consider it still as primarily a device for the building of upper-income housing in central city areas. But, even for projects planned for families able to pay an economic rent, how can decent quarters be provided for the displaced low-income tenants?

The letter also raised the following two question regarding public housing:

1. In your opinion, is the lack of adequate public housing facilities in your city, whether aided by federal, state or local funds, an impediment to progress on your urban redevelopment program?

2. Would you say your program has actually been held up because of the need for additional public housing?

Because of the excellence of the replies received, they are published here for the information and guidance of those concerned with making our cities better places in which to live and to work.

Providence

By LOUIS B. WETMORE
Executive Director
Providence Redevelopment Agency

AFTER careful review of the article, "Urban Rebuilding Plans Face Many High Hurdles," I have written the two statements below. The first is in answer to your specific question about the need for public housing. The second is a comment on your proposal for tying urban redevelopment to the development of new towns.

While I disagree with your "new towns" proposal, I want to make it clear that I am wholly in sympathy with a broad-gauged and more dramatic approach to both urban redevelopment and metropolitan area planning and development. I wish also to endorse the emphasis given in the article to busi-

Greenbelt, Norris, or Kingsport. Rebuilding our cities as they are would be sterile, but building a new central city can be creative.

3. I believe that requiring urban redevelopers to assume responsibility for the development of "new towns" is trying to put the whole urban planning circus in one ring. I submit that the urban redeveloper should not attempt to displace the urban planner. We do need new planned communities and planned redistribution of industries, businesses and homes, but the broad responsibility for this planning rests with the official planning agency. We also need to recognize that the central city has a long, useful existence, planned or unplanned, ahead of it and that the urban redeveloper, in "the action area of city planning," is charged with the task of influencing its constantly changing pattern to make it more efficient, more useful, more livable.

I should be the first to recommend broad enabling legislation to give urban redevelopers opportunity for flexible action, just as I hope that we will have broader powers in the field of zoning. Some people think zoning is planning—let's not begin to say that urban redevelopment is planning, or we shall really confound confusion.

Baltimore

By RICHARD L. STEINER
Baltimore Redevelopment Commission

SO FAR, the activity of this Commission has centered around efforts to improve local redevelopment legislation, public education concerning the redevelopment program, the designation of redevelopment areas, attempts to obtain adequate financing for initial redevelopment undertakings, and a detailed redevelopment study of one area. We have not yet come face to face with the problem of displaced people, although it weighs heavily on our minds and it is recognized that redevelopment cannot proceed without a reasonable solution to this problem. It is obvious that redevelopment is, generally speaking, not a process for rehousing slum dwellers, although it may be a process for improving slum areas.

The staff of this Commission is now cooperating with the staff of the Housing Authority of Baltimore in a research and planning program being conducted by the latter agency, and the two commissions have had several joint meetings to discuss this program and other problems of mutual interest, such as the problem of displaced persons. So far no definite conclusions have been reached.

At the moment the biggest obstacle to redevelopment progress in Baltimore is the lack of adequate public financial assistance. It is hoped, however, that this problem can be met through the approval of a $5,000,000 bond issue which will be submitted to referendum at the November election.

Minneapolis

By EDMOND H. HOBEN
Executive Director
Minneapolis Housing and Redevelopment Authority

MINNESOTA'S redevelopment legislation (Chapter 487, Laws of 1947), although it is unusually restrictive in many senses and may not offer suitable inducement to private enterprise to bring about the investment of substantial funds in redevelopment, does have the merit of containing the rather broad definition of "blighted area." Our current legal interpretation of the law on this point indicated that we can work in areas that are "blighted" because of various deficiencies in land layout, or problems of topography, drainage, or subsoil that are such as to prevent the development of these areas by the normal operations of private enterprise.

Even though the breadth of the "blighted area" definition may permit us to engage in a wide variety of redevelopment operations, we feel that as a matter of practical approach, we must relate any extensive, immediate operations, or any long-term program that is proposed today, to the provision of a larger supply of rental housing in the community. Public interest in our work centers largely on the need for such housing. There is very little genuine local understanding of the redevelopment process as divorced from housing.

I do not believe that the Authority would undertake any clearance of a substantial area of housing in Minneapolis unless, and until, there is assurance that there will be a considerable increase in dwelling units available to the persons who would be displaced by clearance. It is probably fair to say, therefore, that in our case the absence of a larger supply of public housing, or a prospect of such housing being made available immediately, is definitely a deterrent to the clearance and rebuilding of blighted residential neighborhoods.

Because the Authority has been staffed and actually in operation for just three months, we cannot point to any specific project that has been blocked by lack of public housing.

I am very sympathetic with the proposal that revedelopment be broadened in scope so that it actually includes the guidance of new development, either through governmental participation in the building of sizeable accretions of residential property at the outskirts, or by the control of this building process through ownership of strategic tracts of land by government. However, I believe that this concept would be almost impossible to sell to the general public at the present time.

If those provisions of redevelopment legislation that require assurance of the availability of adequate housing for persons displaced by redevelopment are to be carried out conscientiously, I am sure that the promulgation of redevelopment projects involving the clearance of blighted residential areas will bring us face to face with the need of providing, through direct government participation, some housing for the economic group that is above the level currently recognized as proper for subsidized public housing. If this situation arises, interests that now violently oppose public housing, but support urban redevelopment, may be forced to oppose urban redevelopment also, because of the fear that it would constitute further justification for the construction and operation of housing by government.

San Francisco

By MORGAN A. GUNST
Chairman
The Redevelopment Agency of San Francisco

IT IS generally recognized in San Francisco that one of the most stubborn obstacles to urban redevelopment is the low-income residents in some of the areas most in need of redevelopment. These people are unable to pay the rents required to sustain privately financed redevelopment, under our legislation, or to find housing they can afford alsewhere. This problem is recognized in the law, and the Board of Supervisor is forbidden to approve a redevelopment plan, "except on the finding that adequate, permanent housing facilities are or will be made available in the community for such displaced occupants at rents comparable to those obtained at the time of their displacement."

The need for subsidy in order to satisfy this requirement is clear. The San Francisco Board of Supervisors has declared, "Expansion of the public low-rent housing program in the near future would offer some hope for urban redevelopment in that many of the low-income familes who would be displaced from the recommended project area to make way for rebuilding would qualify for public housing."

The question of the importance of public housing to redevelopment is best seen in the light of the general objectives of the urban redevelopment legislation. Unplanned redevelopment has been proceeding in our cities, but in a confused fashion, and at a halting pace and great cost. Public powers are be-

ing brought to bear to make the process more orderly and effective. City government cannot pick up such responsibilities piecemeal. If it is to do the job, it must meet each of the obstacles. The lack of housing is one of the obstacles. This does not mean that to solve all our problems we should simply throw ourselves into a campaign for public housing. Nor is the lack of new public housing so great an obstacle that we must avoid areas entirely where displacement would occur, requiring public housing accommodations. Turnover in existing public housing is an important source of accommodations. We need not concentrate solely on vacant, "arrested areas." Too narrow a pursuit of either of the two lines of activity would be an evasion. We must redevelop where we can, and we must continue to add to our kit of tools to do the job.

While we have some areas of arrested development, and constructive work can be done to redevelop them, we must sooner or later return to our "Western Addition." This is an area of 2¼ square miles of mixed land uses and high land coverage. It houses about 86,000 persons as family groups or single individuals. The essential fact is that 1/3 of all the household groups are definitely low-income (less than $2,100). The answer to your question is then, "Yes, public housing is needed in the urban redevelopment program."

At first it was assumed that federal help would be available. This has been too long delayed to meet the urgent need for action. Californians have now been asked to decide whether to provide state guarantees up to $25,000,000 annually so that as many as 100,000 additional low-rental dwellings may be financed. Somehow and somewhere the necessary subsidy must be found to house the displaced people, and by this means implement a frontal attack on the problem of deteriorated areas.

Essentials for Success In City Planning

By HENRY COHEN
Research Associate
Institute for Urban Land Use and Housing Studies
Columbia University

THERE are two main vantage points from which planning and housing activities may be viewed. First, there is the idealistic framework. This is the framework which provides us with orientation, direction, and purpose. Secondly, there is the operating framework within which daily activity takes place. These levels are not mutually exclusive. In practice, there will be gross discrepancies, inconsistencies, and compromises. Activities and programs should be evaluated on both levels. On the basis of the "ideal" level, we should not completely negate the daily compromises, the half-achievements, and the slow devious steps that may represent significant accomplishments when added together.

On the "ideal" level, we cannot in a democratic society separate satisfactory city planning from intelligent and humane municipal management. On the operating level, this kind of relationship must be translated into concrete, meaningful measures. Governmental planning, whether national, state, or local, must be integrally related to progressive public administration. Wherever and whenever we are concerned with making provision for mass welfare, *the planning process must be one with democratic political processes.* Similarly, *physical improvements must be related to improvements in our social organization and in our social relationships.* Any kind of city planning which loses sight of these two relationships is necessarily inadequate, narrowly conceived, and may be oppressive. Planners must see their place in a generally progressive and liberal framework of government.

Many city planners are fully aware of, and concerned with, the over-all generalized goals. Many of them try, each in his own way, to translate these long-range generalized goals into specific daily actions. There are thus many successful bits of works being done here and there throughout the country. On this operating level of analysis, what do we learn from the relatively successful operations with their achievements? How do those operations which we usually regard as the better ones—Cleveland, San Francisco, Los Angeles, Philadelphia, for example—differ from acknowledged unsuccessful operations? Seven indices seem to characterize this distinction.

1. Staff morale: Among the staff there is usually found a high degree of esprit de corps, a sense of relative accomplishment, and a small amount of critical internal bickering.

2. There is an easy working relationship with other city departments.

3. There is usually a marked liaison with citizens' groups.

4. There is usually strong and enthusiastic support from a significant section of the local press.

5. There is usually some outward sign of recent acceptance by municipal leaders or the public of some planning-department suggestions or programs, e.g., bond-issue approval, capital budget, etc.

6. There is usually a strong effort to develop basic studies on community development, so that some slow understanding of community problems may be encouraged.

7. The funds available for planning are related to the size of the job that has to be done by the planning agency. Though no agency receives the amount of money it might desire, some do receive substantially higher per capita appropriations than others.

The author of this article recently concluded a tour during which he studied planning progress in various sections of the country. His perspective and observations on the status of local planning should be of interest to planners and officials not able to travel so extensively away from the home hearth. The views of the author are his own and do not necessarily represent those of the Institute for Urban Land Use and Housing Studies, with which he is associated.

Most Changes Come Slowly

Most local planning programs would obviously fall short on the basis of the "ideal" framework referred to above. Without a more stringent land-development policy, without a more equitable and intelligent tax system, without a recognition and acceptance of specific higher standards of living in urban areas, and without other fundamental social improvements, the work of the city planning departments will clearly not be up to snuff. However, within existing limits, the departments in the cities mentioned can point to solid achievements. These achievements are not to be minimized and ignored.

If concrete physical improvements have been slow in coming, that is in great part due to the difficulty of the tasks we face. Many of these departments have in diverse ways made considerable progress in developing the administrative techniques and relationships that are an essential part of the democratic process. These are no small achievements; they are as vital as the specific physical improvements for which we work. These processes are the stuff of which greater accomplishments are made. These achievements are the positive experiments that are so vital in a liberal democracy. Without these improvements, without these small experiments and compromises, we could not hope to develop the technical excellence nor focus the decisive political struggle which is necessary at intervals to achieve the larger goals.

Miami, Fla.—

60 Million Gallons a Day

▲ **Biggest single unit that boosts the capacity of the Miami water-treatment plant is this new clarifier. The tank was built with wire-bound prestressed concrete.**

◀ **Filtration Superintendent W. L. Black.**

▶ **Raw water enters these tanks from the bottom and loses any sand that may be in it. It receives its application of chemicals as it flows away through the flumes.**

Capacity of water-treatment plant boosted—chemical mixing, clarification, and chlorination improved—lime sludge to be reclaimed

THERE have been comments out in the Hialeah section of greater Miami that experiments are under way for a new secret weapon. A casual inspection might substantiate these rumors to some extent, for alongside the water-works clarifiers lies a black steel tube 230 feet long and 8 feet in diameter, at one end of which is a cluster of six smaller tubes surrounding it like the directional fins of a rocket. The whole rig looks like some really super de luxe "V-III" rocket that could sail to Mars if it took a notion.

Of course if one looked around a bit one would notice also that the water treatment plant is undergoing something of an overhauling. There is a new 2½-mg storage reservoir being completed. There are two new chemical mixing tanks that already have been completed and are in operation. There is a new Dorr clarifier built in a prestressed concrete tank that uses the Preload wire-reinforcing system. There are new recarbonation basins, a large chlorination station, and a big chlorine contact chamber.

So if you looked at all these, you might conclude—and rightly—that the secret weapon is part of the improvements to the water works. The big black tube lying ominously on its side is a new rotating kiln to be used for reclaiming the waste lime sludge now thrown away. The "directional fins" are cooling tubes used to lower the temperature of the lime as it leaves the plant.

Water Comes from Everglades

Miami obtains water from the historic and romantic Everglades. However, it does not tap these famous swamps directly. What it does is draw from a series of 20 wells drilled into the soft, water-bearing, oolitic limestone that contains the Everglades water. In the raw state, the water is hard and has a certain amount of color. Treatment is designed to correct this.

For many years the city has used in its plant a combination of lime and alum to reduce water hardness. The plant in essence had four steel mixing chambers of limited capacity and two Dorr clarifiers capable of handling 20 mgd each. As requirements grew, this equipment would no longer do the trick. Water was forced through the settling basins too quickly, after-precipitation took place and coated the sand grains in the filters. Not enough clear water storage was available for peak demand periods. And the color of the water remained objectionable.

To improve chemical mixing, Water Director W. A. Glass and his Filter Superintendent W. L. Black replaced the steel mixing tanks with a pair of concrete tanks. These are designed with an inverted pyramid bottom. The water enters through ports in the sloping sides and slowly rises to the top. This allows the sand generally in the well water to settle into the pyramid apex, where it is drawn off occasionally.

As the water rises to the surface it enters a flume, where it receives its application of lime slurry. The plant practices the policy of recirculating a portion of the sludge with the new lime. Filter Superintendent Black is experimenting with the practice of combining the sludge at the chemical feeders so that the lime slurry and the sludge go through the pipeline together. Experi-

ence elsewhere had led him to believe that this will prevent lime slurry lines from caking and clogging. He hopes also that it will prevent those accumulations of lime on the sides of the mixing tanks that have been such a nuisance to him in the past.

New 20-Mgd Clarifier

To give the plant its present 60-mgd capacity, the most important unit is the new 20-mgd Dorr clarifier. This unit, instead of being square, is circular and is built in a tank of prestressed reinforced concrete built by the Preload Company of New York. Flow into the tank has been revised slightly from the standard clarified to produce greater efficiencies of operation.

Sludge from all three clarifiers goes into a lagoon where it later goes through the new big rotary kiln for recalcining. It is interesting to note that for every ton of lime added to the water, the treatment will remove 2 tons, because of the large amount of lime in the raw water. The recalcining process is going to make available approximately 25 tons of lime per day in excess of what the plant normally will use. This will be available for sale. Director Glass expects the sale of lime to bring the plant an income of $75,000 per year. The recalcining operation also will be another step towards making the plant a bit more self-sufficient. Tie-ups of coal by strikes already have made lime delivery in the Miami area difficult.

The new kiln also provides another feature helpful in the treatment procedure. From it the plant gets its carbon dioxide for recarbonation and pH control. In this phase Superintendent Black drops the pH back to slightly over 7 before chlorination.

Chlorination is to the "breakpoint." There are three new 3,000-pound-per-day Wallace and Tiernan chlorinators providing this treatment, with their application of chlorine tied with the flow measure by the Simplex venturimeter.

Not only Miami, but Miami Beach and certain other outlying communities draw on this water-supply system. Consequently, added treated-water storage assumes importance to a lot of people. To provide added storage at the plant, the city is building a 2½-mg concrete ground-storage reservoir and is boosting the pumping capacity to the distribution system. This, coupled with other ground storage reservoirs and elevated storage, gives the system a total reserve storage of 22 million gallons. Many of these storage reservoirs are of the wire-wound prestressed type similar to the general design of the clarifier.

The pumping equipment includes two DeLaval centrifugal pumps of 14,000-gpm capacity, one DeLaval pump of 2,000 gpm, and one Layne & Bowler deep-well pump that can handle 4,000 gallons per minute.

Miami's plant is one of the few in the United States that has open-air filter controls.

Not a new superpowered rocket—it is the big rotary kiln that Miami plans to use to recondition the lime sludge.

Miami's water department operates on a business-like basis. All water is metered, regardless of where it is used. The city pays the department a fire protection charge amounting to $60,000 per year. In turn, the department pays the city an amount roughly approximating the sum that would be paid in taxes by a privately owned system. Then there is a third sum that goes to the city, which represents, in effect, a dividend to the city as a stockholder in this enterprise.

The department makes no extra charge to those outside the city limits. It does, however, require customers outside the city to build their own mains or pay for the extension. In the city, the department will build mains if the revenue from meters will meet the main construction cost in four years.

The Miami distribution system has one unique feature. It is one of the few in the country that joints the pipes with very dry portland cement mortar instead of lead or some of the more frequently used compounds. This practice has been followed for many years here with excellent results. Director Glass feels that a 30-inch-diameter pipe is the largest that he can joint safely with dry cement mortar. Beyond this he uses the more conventional jointing material.

The customers receive bills on a quarterly basis. The meter-reading crew is at work continuously, and customers are billed as of the day that their meters are read. One reader will handle about 300 meters per day. The meters are in boxes at the curb.

New raw-water storage basins give the plant needed reserve capacity.

By FRANK E. FELIZ
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THE BAY AREA—comprising mainly the nine counties bordering San Francisco Bay—is learning the lesson of city-county-regional teamwork through an increasing pattern of two-way working agreements. These share the responsibility for advancing projects and solving problems affecting the future of the Bay Area communities.

Under the heat of the national spotlight in World War II, the Bay Area—especially its smaller communities—was expanded far beyond its capacity to serve new residents coming by the thousands to find housing, utilities, and other living requirements. Three years of readjustment to peacetime living have worked miracles in many municipalities around the Bay. This is not to say that they are out of the woods in terms of meeting home-front problems, but they are making progress; and by working together they are doing a better job than by trying to do it alone.

Bay Area Council Established in 1946

With more than one million new residents in the Bay counties since 1940, the region has been compelled to put "full speed ahead" on inter-city, inter-county and area-wide planning and development to cope with its liabilities and problems. A number of Bay Area civic and industrial organizations and their leaders spearheaded, in 1946, the first bay-wide development organization to take action in providing a united front for the San Francisco Bay Area as an economic unit.

Now winding up its second year of operations, the Bay Area Council, Inc., a non-profit organization, is working with established organizations on various aspects of the area-wide program, with emphasis on planning, research, industrial development, and public relations.

The close-working relationship between smaller communities and larger cities in the Council's program is evidenced by the guiding policy of the organization, which is in the hands of a Board of Governors of 100 members, including chairmen of boards of supervisors and mayors of principal cities, selected by the California League of Cities. Other members are drawn from the ranks of industry, agriculture, commerce, education, and labor, with vice-presidents appointed annually in each of the nine Bay counties. The Council's staff operations are headed by Frank E. Marsh, executive vice-president and general manager, who works with a chairman, William M. Hale, executive vice-president of the American Trust Company in San Francisco, and an executive committee of nine members. The staff includes an assistant to the general manager, also in charge of public relations; a research director, and an assistant secretary in charge of office activities, with three secretary-stenographers. Present membership of the Council is over 500, and funds are provided by sponsoring private organizations.

Planning Activities Pooled

One of the first important steps taken in this Bay Area program was to attempt an over-all approach to regional planning—not as a master-plan project, which loomed as a mandatory order to smaller communities—but as a straightforward pooling of planning activities and problems in the municipalities and counties around the Bay. Technical planners of various bay-wide commissions met, some of them for the first time, at several informal meetings called by the Council. The planners were asked to "write their own ticket" on a program that would be helpful to Bay Area planning and development. Under the chairmanship of Nestor Barrett, Director-Secretary of the Santa Clara County Planning Commission, the group has now developed a long-range program of planning activity co-sponsored by the Bay Area Council and the various planning commissions of the Area.

First Project a Large Basic Map of Area

First project of the planners, in which every community and county participated, is the largest basic map ever made of the San Francisco Bay Area, now nearing completion, done to a scale of 1 inch to 2,000 feet. Supervised by an advisory committee of Chairman Barrett, John Marr, Planning Director of the City of Oakland, and T. J. Kent, Jr., recently appointed head of the new Department of Civic Planning at the University of California, and former Planning Director of the City and County of San Francisco, this map is being produced by C. E. Erickson & Associates, with the Council underwriting the project.

The Bay Area Basic Map—18 by 20 feet—is being produced directly from approved maps of the cities and counties submitted by local planning commissions. Every step of the way has been a test of joint agreement on the aspects of presentation and technical information that must go into such a chart. The map, however, is only the starting point of the Bay Area Committee of Planning Technicians. It will be the base for a series of land-use studies; to plan area and local zoning and the

need for certain uniform ordinances governing their operation; and to develop a series of maps, as time and funds permit, on transportation, housing, industries, recreation, and all factors contributing to a broad planning and development program.

Technical Knowledge Expanded

More tangible benefit of the area-planning approach is the practical expansion of knowledge and technical assistance offered to the smaller municipalities and counties by their larger and wealthier neighbors. Conversely, the former are in a better position to acquaint their city colleagues with the needs of suburban residents, and the requirements of agricultural and smaller communities, all of which are economically important to the metropolitan centers of finance, industry, and trade.

The net result, in the brief period of Bay Area planning progress, is a trend toward regional thinking where local planning is concerned. The collective drive on bay-wide planning has multiplied the strength of city and county planning in terms of research knowledge. It has added the promotional endorsement of public opinion needed to carry on civic planning as a community asset.

City-Regional Trend to Teamwork

Prime evidence of the new bay-wide regional viewpoint is provided by the City and County of San Francisco, which has adopted that approach in a number of its projects. Formation of a Bay Area Airport Planning Advisory Group was recently made possible at the request of Mayor Elmer Robinson, with representatives of all major Bay counties participating in San Francisco's planning and public works development program for long-range establishment of airport facilities.

A number of Bay Area committees have been organized under the co-sponsorship of the Council—Industrial and Business Development, World Trade, Maritime Affairs, City Managers, Chambers of Commerce—which meet periodically to recommend action on projects or problems, often affecting a number of communities, which are of concern to the entire area.

Plans are now under way, following a conference of municipal, state, and privately owned shipping-port and terminal operators of the Bay Area, to establish a bay-wide agency that will accomplish, through a single office, some of the multiple and costly services now borne by each of the ports. These include research, planning, cargo traffic development, and promotion.

Similar efforts are being made to establish a Bay Area Transit Authority. Other area-wide problems are also being taken up for study and action, with both small and large communities participating in the "solid front" approach.

Cooperative efforts of Bay Area city managers have provided a regional contribution to local municipal administration. One of the first Council moves to stimulate inter-city relationships in solving mutual problems was to bring together the city managers of the nine Bay counties.

Now meeting on a quarterly basis, this Bay Area conference group provides a clearing-house of activities and problems, and an exchange of ideas and headaches, that contribute much to their individual community government activities. The subjects covered at a typical meeting may include personnel selection and pay scales, street lighting and street signs, parking space and parking meters, property maintenance and purchasing supplies, and the current challenge to every city government of balancing the budget with mounting costs and complaining taxpayers on the threshold.

The Bay Area city managers make effective use of the organizations interested in working with local communities on a regional basis. The Council has worked with the managers on many of their problems, while the League of California Cities, the State Chamber of Commerce, and other large city chambers, have a long record of service in stimulating widespread support of local planning and development projects requiring legislative or other action. Present chairman of the Bay Area City Managers' organization is O. W. Campbell, City Manager of San Jose. The first chairman was Wayne Thompson, City Manager of Richmond.

Richmond is one municipality that has taken a keen interest in inter-municipal cooperation. During the war, with new shipyards and war plants, Richmond's population increased 500%, from 25,000 to 125,000. It has held more than 100,000 residents, mainly through the establishment of a multi-million dollar array of new plants and expansions. However, to meet its industrial and residential requirements, it needs low-cost water. The Bay Area Council has assisted Richmond and adjoining communities in their efforts to secure transmission of water from the Contra Costa Canal, which brings water down from upstate sources across the eastern section of the county. Regional action is also being taken under guidance of the State Chamber of Commerce to develop a State Water Board survey of the area's water supply, with other planning and development recommendations to follow.

Richmond has cooperated in a number of ways on other projects of common interest with its neighboring municipalities of Berkeley, Alameda, and San Pablo. For example, arrangements have been made for the City of San Pablo, just recently incorporated, to use the facilities of the Richmond police and fire radio system, a modern FM installation, on a year-to-year basis until San Pablo acquires its own service. No charge is made for this accommodation.

Another example of inter-municipal consultation occurred on the subject of jurisdiction over building permits for property intersected by political boundaries. On Richmond's instigation, a conference between the officials concerned from Contra Costa County, and the cities of San Pablo, El Cerrito, Albany, and Richmond was held and

Nestor Barrett, T. J. Kent, Jr., Frank E. Marsh, and C. E. Erickson review plans for the huge basic map to be used for studies in the Bay Area's development.

Major Bay Area cities look beyond their boundaries in planning and development. View from a San Francisco hotel encompasses a score of communities.

a formula acceptable to all developed. This, in turn, was presented to the legislative body of each respective government and adopted.

Since the local transit company, the Key System, covers the entire East Bay region, it is imperative that the individual cities coordinate their dealings with the company in order to avoid the danger of their being played off against each other. A committee of representatives from each is at present preparing a model franchise to be negotiated on a "solid front" basis.

Case Study of Cooperation Benefits

The case of Benicia Arsenal, century-old arms and ammunition base employing 1,500 or more at Benicia, near Vallejo, in Solano County, shows the importance of regional cooperation to the municipalities involved. The War Department at Washington has been planning consolidation of various over-expanded wartime facilities and Benicia Arsenal was tentatively scheduled for a transfer to the Utah area. Benicia and Vallejo called upon the Council and other bay-wide organizations to cooperate with them in their efforts to hold the facility and its employees, which were the mainstay of the local area's business economy.

At the same time, the Council and municipal and county assessors of the Bay Area were cooperating on a study showing the enormous holdings of tax-exempt federally owned and leased properties in the Bay counties, a substantial portion of which was in the already congested metropolitan area. Working with chambers of commerce, civic and business organizations, and city and county governments, the Council developed and issued a comprehensive report for presentation at Congressional hearings in Washington, D. C., on this subject.

Net outcome of the smaller communities' move to seek regional aid was: Benicia Arsenal retained its location status and a San Francisco expansion plan was cancelled. Since that time, a concerted move has been made by the federal agencies and military branches to consolidate operations, vacate needed building space for civilian use and return it to the tax rolls, and otherwise cooperate with the small, as well as the larger cities in their efforts to meet the needs of an increased population.

There are numerous other examples of this two-way exchange of services and joint support provided between the region and the smaller cities which may be covered briefly:

Vallejo has used Bay Area organizations' support to assure adequate shipbuilding contracts for its adjoining Mare Island Navy Yard.

Redwood City, down the San Francisco Peninsula, counts on bay-wide cooperation to build cargo volume through its small, but growing, ambitious port facilities, now bidding for food shipments from the rich Santa Clara Valley.

Pittsburg seeks housing for several hundred new employees in the new $30,000,000 plant expansion of Columbia Steel.

Alameda and the Hayward area, as well as San Mateo and the Peninsula, head a long list of communities interested in freeway improvements and better traffic access to the metropolitan area.

Many inter-city and inter-county pacts are being worked out with the counsel and assistance of the California League of Cities, headed by Richard Graves, Executive Director, and the Central Coast Council of the California State Chamber of Commerce.

Mutual-assistance pacts on fire and police protection exist in a number of Bay Area communities, wherein a group of city governments have worked out arrangements for pooling manpower and equipment in the event of an emergency. Typical example of this joint effort is the agreement between San Mateo, Hillsborough, and Burlingame, three of the leading San Mateo county communities, with a substantial suburban population in the Peninsula area south of San Francisco.

Similar inter-community arrangements for fire protection are in operation in the Berkeley area, with particular reference to operation of radio call equipment in a two-way deal with the smaller, neighboring community of Kensington. Under this plan, Kensington can send in a call for Berkeley equipment via the radio broadcasting setup whenever the fire reaches a point beyond the capacity of the local facilities.

Joint Personnel Surveys

Pooling of community efforts have also been evidenced in programs to secure suitable personnel, with the Bay Area communities of Oakland, Berkeley cooperating with Alameda, Contra Costa, and San Mateo counties in joint personnel surveys. These studies were made to ascertain the going wage rates in private industry and government services, as the basis for establishing salary levels in local government.

These surveys have been substantially helpful in establishing good will with merchants and business firms interested in maintaining equitable, rather than competitive, wage levels for available employees. Another development of the area-wide personnel approach was a joint examination for employees in which bay-wide cities, headed by San Francisco and Berkeley, participated.

Carl Froerer, City Manager of Alameda, gives an interesting example of inter-community action through the Alameda County Highway Advisory Committee, chaired by Thomas E. Caldecott, Supervisor of Alameda County. This Committee has prepared a unified state highway improvement program and a major street improvement program to be developed with county aid on streets of more than local importance. Mr. Froerer also reported a joint investigation made by the city engineers of East Bay cities (Oakland, Alameda, Berkeley, etc.) to determine whether garbage grinders should be permitted to be installed in homes and other locations. The study, headed by Walter N.

Frickstad, Oakland City Engineer, resulted in amendment of ordinances to permit use of the grinders.

Ross Miller, City Manager of Berkeley, reports an increasing trend toward inter-city, city-county and regional cooperative action on projects and problems affecting all levels of local government. Berkeley is a leader in the East Bay city group pledged to inter-community planning on problems which cannot be confined to city limits, including streets, mass transportation, waterfront development, recreational facilities, etc.

Berkeley has also worked out, in addition to agreements already mentioned, a joint pact with neighboring Albany on a parking area serving the large housing project, Cordornices Village, the boundaries of which lie within both communities. Similar arrangements have been made for mutual responsibility, financial and administrative, on recreational areas and parks which cross community lines or actually are wholly within the larger city. Under the latter plan, both communities may offer residents the use and facilities of the recreational area with knowledge of sharing responsibility for maintenance and service to the public.

San Jose's Common Governmental Center

City Manager O. W. Campbell of San Jose reports that perhaps the major cooperative undertaking there is that between the County of Santa Clara and the City with regard to the development of a common governmental center which will ultimately be the site of the county court house, the city hall, a state building, a federal building, a jail, and such other administrative governmental offices as may be required. This is a long-term project scheduled over the next 25 or 30 years. Progress to date consists of the aquisition by the city and county of approximately 85 acres as the site of the project, and the development of plans and specifications for its utilization.

The City of San Jose has a cooperative agreement with the City of Santa Clara relative to the use of an outfall sewer. This agreement was entered into about a year ago, and provides for connection of the Santa Clara sewer system to the San Jose outfall for a yearly rental fee of approximately $3,000. This fee was derived by estimating the cost of the outfall prorated to the amount of use by Santa Clara. On the basis of this agreement, the City of Santa Clara issued bonds recently to construct sewer additions and improvements.

The city also has an agreement with the San Jose School District whereby the city and the school district share in the operating cost of the city recreation program. The school district's contribution has amounted to 25% of the cost, or $10,000, whichever is less.

San Jose is a strong supporter of the city-region approach to municipal planning and development, and has consistently taken the leadership in cooperating with the other Bay Area cities. This policy is borne out in the unusual teamwork between the municipal and county governments and the San Jose Chamber of Commerce, which has resulted in the phenomenal new industrial developments in the city and adjoining area, totaling more than 70 major plant locations or expansions since 1940.

Marin County Planning

On the north side of the Bay Area, Marin County has taken cognizance of its fast-growing residential development to follow the bay-wide pattern of inter-community cooperation on problems of service to thousands of new home owners and prospective residents in its numerous smaller communities.

The Marin County Planning Commission, the San Rafael Chamber of Commerce, and organizations and civic officials are cooperating on projects and issues requiring inter-city financing and support to become a reality.

Mill Valley, as an example, has mushroomed in growth over the past decade as one of the Bay Area's more popular suburban residential communities. Under the leadership of many public-spirited residents, including Mayor Harrison Leppo and Ted B. Adsit, newly appointed City Manager (formerly Planning Director of Pasadena), the city is tackling its problems with pronounced success, although admittedly not yet attaining all its goals.

Major problems include sanitation and sewage, with housing and recreation also on the priority list for attention. Mill Valley had difficulty, at first, in securing necessary support of its moves to solve the sanitation problem, until certain aspects of the present garbage-disposal method were disclosed as a menace to public health. Initial efforts to pass a sanitation-district measure were defeated, and Mill Valley finally developed a sewage-treatment plant within the watershed area. This was made available, under cooperative agreement, to smaller community districts on an assessment basis which had been worked out prior to building the plant.

Faced with the challenge of moving into the utility business, Mill Valley has organized an inter-city project with Sausalito and other neighboring districts to act jointly on problems requiring federal and state cooperation.

* * *

The Bay Area trend toward greater inter-community, city-county, and inter-county planning and programming to combine forces and funds on projects of common interest has become a marked factor in bay-wide regional development, particularly since the end of World War II.

While the healthy, competitive relations of cities with regard to new business, new plants, and new residents still exists, there is an increasing realization of the fact that what benefits any one of the regional communities, benefits all.

Fireworks Wonders for New Brunswick's Hallowe'en

IT IS comforting to know that in this era of atomic terror, safety and sanity have been achieved in the use of fireworks, and that tots and their parents need not be deprived of the stimulating displays that were essential in their grandfathers' era when the Fourth of July was Independence Day.

The City of New Brunswick, N. J., has enjoyed considerable experience with fireworks, but its most significant experience was not a patriotic outburst but an effective scheme to lure its juniors from the practice of stealing gates, overturning ash cans, breaking street lamps, and sending false fire alarms. The event last year was the Hallowe'en celebration.

The city fathers got together with the Junior Chamber of Commerce and several local manufacturers and set up a program that succeeded in keeping the children's eyes popping from dark until bedtime. It started with a gaudy parade of fire apparatus, floats, and bands. "Everyone" took part, dressed in the weirdest of costumes, marching through the town to the high-school stadium where prizes were awarded for the most outlandish get-ups. There were free favors for all the children, and cider, doughnuts, popcorn, and candy were had by all.

The climax of the evening was a half-hour's fireworks display with the sky full of bursting bombs and cascades of colored stars. Interspersed with aerial shells were fireworks effects of burning witches riding madly back and forth, enormous pumpkins exploding in showers of sparks and brilliant trademarks of local companies which underwrote the show.

High jinks and shenanigans were forgotten. And because the show was really good, the Hallowe'en menace was licked. It is to be tried again this year, and New Brunswick believes it has hit on cheap insurance plus a good time for the entire community.

Radio Sharpens Toledo's

Charles Sneyer, in front, is broadcasting to the fire stations, all of which are equipped with telephones and radio receivers as well as registers by which a tape recording is made of each call from a box. Standing are Fire Chief Patrick Daly and Assistant Alarm Superintendent Charles Mensing.

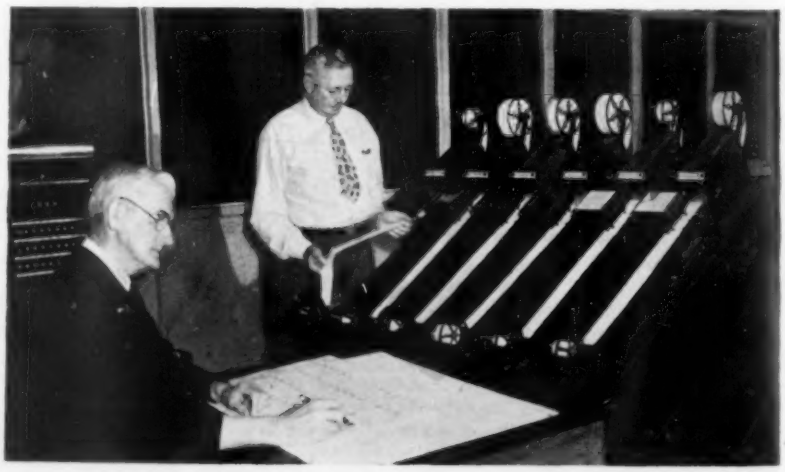
TOLEDO'S eyes and ears are sharper and longer, says the Toledo Commission of Publicity and Efficiency. A completely rebuilt radio system is speeding communications and making the city's whole protective system better coordinated. The extensive improvements being carried out under the direction of J. Fred Madden, Superintendent of Fire and Police Alarm, is putting the city abreast of the times, thus assuring greater safety for citizens and economy in operations. Fire and police equipment and personnel are put on emergency jobs more quickly than ever before, and more effectively.

Two factors brought about the extensive improvements. First, much of the radio end of the equipment badly needed to be replaced. Second, the city's new finance program, based to a large extent on collections for the municipal income tax of 1%, has made the improvements possible. It has provided new equipment without bond issues or waste, without delays or stinting. Modern technique now supports and strengthens the carefully planned and maintained system started years before radio's advent. The old system was excellent; the new perfects it.

The improved system unites Toledo with American cities across the continent by wireless telegraph, and unites all major fire and police equipment, and all firehouses and police units, with a carefully knit system made up of radio, fire-alarm circuits, police-call boxes, public phones, and telegraph-alarm units.

The transformation of the wireless end of the system was started a few years ago when the old radio-telegraph installation began to be of doubtful reliability. About $5,000 was expended for a new transmitter. With the assignment of FM frequencies, transformation to the new system was deemed advisable. The City Council, headed by Mayor Michael V. DiSalle, and the city administration, with George N. Schoonmaker as City Manager, outlined a program to cost another $50,000. These installations are now being completed. Safety Director Edward A. DeAngelo heads the departments affected by the reconstruction program.

While Mr. Madden is in charge of the maintenance of the entire fire alarm system, the radio and phone end of the



Maintenance and repair of the entire alarm system are under the direction of the Superintendent of Police and Fire Alarm, J. Fred Madden, shown here reading one of the police call-box tapes. Assistant Dispatcher Peter Zawodni is seated. Police call boxes are an important source of contact with police officers both afoot and in cars.

Municipal Eyes and Ears

▲ **Left to right: City Manager George N. Schoonmaker, Fire Chief Patrick Daly, and Patrolman Howard E. Wenland.**

▶ **Radio Technician Carl Beck installing a special short aerial on an R.C.A. receiving set.**

installation work has been under the direction of Technician Carl Beck. Joseph Guitteau, long in the service of the city, is in charge of the operation of the police-alarm system, while Charles Mensing, Assistant Superintendent under Mr. Madden, and Ben Miner, Chief Operator, working under the direction of Fire Chief Patrick Daly, are in charge of the fire board. Fire operators in this setup are given greater responsibility than in some cities. They supervise the routine of shifting emergency equipment, of checking lines, and similar work. The police board likewise supervises emergency assignment of equipment and, in general, keeps an eye on all phases of the city's protective system.

The entire alarm system centers in a specially constructed building erected in 1930. It is near the downtown section of the city, within a stone's throw of the Safety Building and near the city administrative office.

New Plans Made Last Year

Preliminary steps in the modernization of the police and fire radio system were taken early in 1947. Plans were made at that time to separate the radio systems of the two departments. The Western Electric model 9A station transmitter, installed in 1930, had long since served its purpose and become obsolete by present-day standards. Conforming to F. C. C. regulations regarding new frequency allocations for fire and police in the 152 to 162 mc band, preliminary field tests were made on these frequencies.

Extensive field tests proved the centrally located fire and police alarm building an excellent site for the two fixed stations, and the 109-foot tower on top of this building could be used for both station antennae. Equipment of several manufacturers was tested, and from the engineering data collected, specifications were drawn up and bids called for.

The bid of the Radio Corporation of America was accepted and actual installation was started early in 1948.

The Fire Department land station (shown at the upper left of the page opposite) consists of a 50-watt transmitter operating on 154.19 mc located in the radio room with a remote-control panel at the fire-operator's position. The Fire Department at present has nine mobile installations operating on 153.95 mc and four cars operating on the same frequency, including one line truck and two trouble cars. Work will soon start on the installation of mobile equipment in six ladder trucks and two emergency cars *in the water department.*

A receiver was installed in each fire station (a total of 23) to serve as an additional means of receiving alarms from the fire-alarm office. These station receivers feature a new and unusual antenna engineered by Radio Technician Beck. The use of this antenna greatly simplified the installation of the receivers and eliminated the need of more costly outdoor antennas. The police-station antenna is mounted on the same tower, and a 50-watt transmitter is installed in the radio room with a remote-control console at the police-dispatcher's position.

The police department has 10 cars with the new equipment and work is progressing on the remainder. Until all police cars are changed over, the police dispatcher is broadcasting on both FM and the old AM simultaneously. The police station operates on 156.45 mc and the mobile units on 155.97 mc.

With 50-watt power at this location, both departments work a range of about 20 miles, which is 10 miles beyond the farthest point in the city.

Radio telegraph takes care of most out-of-town police business but it is planned to work point-to-point with the State Highway Patrol at Findlay, Ohio, a distance of about 30 miles.

How the Detroit Plant Works

Sewage treatment in Detroit is a municipal operation that takes on international aspects

MANY have stated that one has no right to judge the efficiency of a sewage treatment plant until it has had an opportunity to operate for a year or two. When one considers the operation of one of the largest sewage-treatment plants in the country, it follows naturally enough that perhaps one should give the plant even longer to get under way and prove itself. The big Detroit plant was constructed in 1940 and consequently has had eight years to smooth out its operation.

These eight years give the observer an opportunity of seeing something more of the plant than mere size. One should be able to appraise its operation and gain some guidance on the workings of other, smaller plants. Smooth operation of the plant is important. Sewage treatment in the Detroit area has been an international issue since 1909 because of the city's proximity to Canada, and the big plant recognizes this city's acceptance of its share of the responsibility.

The Detroit plant operates administratively as it should—as a division of the Department of Water Supply. Its place there shows that sewage treatment is recognized as only a phase of water treatment. It is the reworking of water that has been used by a city so that its release will not be a nuisance or health hazard. The plant operates on revenue received from a charge added to the water bill.

The plant receives mainly a combined sewage and storm water. The population served is approximately 2,300,000. The flows average around 400 mgd. The pumping capacity of the plant is roughtly 800 mgd.

In examining the plant, if one follows the flow through from point of sewage entry, he starts at the pumping station with its six big pumps. Most operators would like a grit chamber in front of the pumps to protect the impellers from excess wear. By the time the two big interceptors had reached the plant, however, they were so far underground that a grit chamber was impractical.

Pumps Clog-Resistant

This meant that the pumps had to be able to handle the miscellaneous material that characterizes all sewage and storm drainage. The pumps consist of six vertical Worthington sewage pumps powered by Allis-Chalmers 4,600-volt synchronous motors. Two of these pumps can handle 180 cubic feet per second; two handle 230 cfs, and the remaining two have capacities of 280 cfs against a head of 50 feet. During the eight years of operation the pumps have handled bricks, coal, tin cans, short planks, and even a 2-foot length of railroad tie without damage.

The pumps lift the sewage to the point where it can flow through the rest of the plant by gravity. As the sewage is discharged from the pumps, it flows first through bar racks and next through grit chambers. There are eight of these bar racks, each with ¾-inch openings. The rakings are ground by two Jeffrey grinding machines and are returned to the influent.

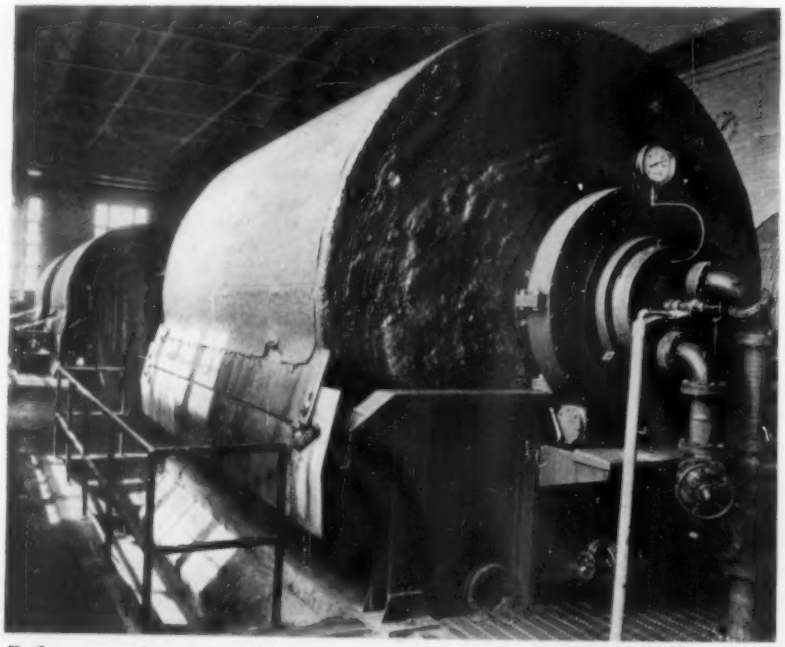
Extra-Long Grit Chambers

There are also eight grit chambers, notable perhaps because of their extra length. They are 150 feet long and were designed in this way to make their construction easier, although they required somewhat more material. The chambers are equipped with Jeffrey V-bucket scraper conveyors. The grit from these chambers also goes to the incinerator.

The sewage, with its grit removed, then flows to the sedimentation tanks, passing on its way through a pair of Simplex venturi meters. There are eight sedimentation tanks. Each is designed to give a nominal detention period of 90 minutes. The tanks are covered to eliminate the possibility of their being a nuisance to adjoining property owners. Since covering seemed advisable, they were made rectangular to make construction easier.

The cost of the covers for the tanks was not great. Walls were at close intervals, to support the return flights of the Jeffrey sludge conveyors. Each tank is 117 feet wide, and is divided into seven compartments. The partition walls, 10 inches thick, are not designed to support a compartment when full if the adjacent compartment is empty. Openings in the walls insure that all channels will fill or drain together.

The settled sewage is then allowed to leave the plant after receiving a protective treatment of chlorination. As would be expected, this required husky chlorination equipment. Nine Wallace and Tiernan manual-control vacuum-type solution-feed chlorinators provide this treatment. At times they are forced to supply their entire capacity of 27 tons per day. The plant buys chlorine



Refinements in vacuum-filter operations have been significant at Detroit.

in tank ...rs of 16- and 30-ton capacity. The chlorinated effluent flows to the river ... outlet that has been carefully ... to avoid affecting the water supply ... Wyandotte or the shore improvements on both the Detroit and the Canadian sides.

The sludge received from the settling tanks has received its share of discussion in the technical field. The plant provides digestion for about 20% of the sludge. And the gas so generated is stored in a Graver Tank spherical gas holder for use in a 350-hp Worthington gas engine that supplies part of the power used for pumping. Originally, the plans provided for elutriation of the digested sludge prior to its dewatering on vacuum filters. After a period of operation, this practice was dropped. Now the digested sludge is returned to the primary settling tanks for resettling. The rest of the sludge, undigested, amounting to about 80% of the total volume, is sent directly to the filters.

Actually this is no handicap to filter operation. Experience at Detroit has shown that the raw sludge filters more easily than the digested. Of course, the digestion process reduces the amount of sludge to be handled, but it also entails considerably more equipment to be built and cared for. By sending the digested sludge to the settling tank and resettling it, the sludge is reported to handle substantially as does the raw.

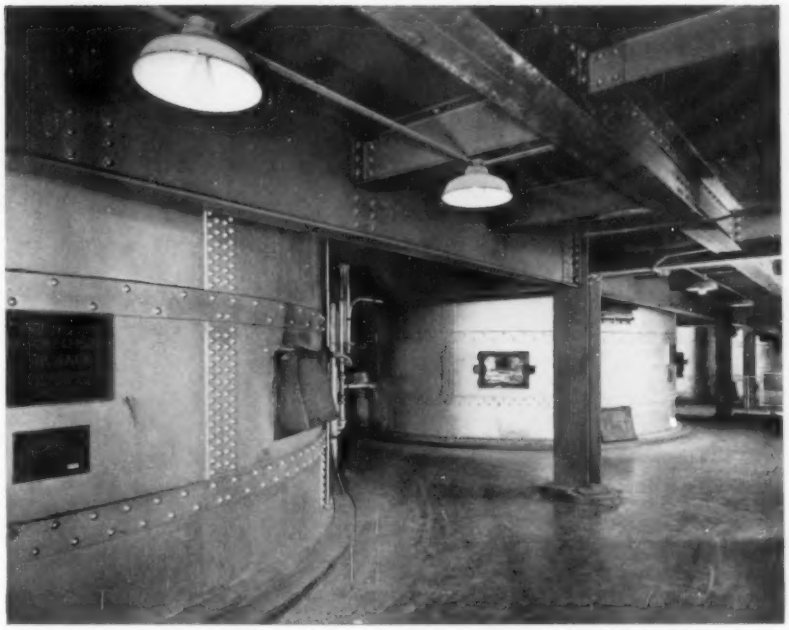
Sludge Conditioning

Ferric chloride and lime are used to condition the sludge. The plant uses approximately 2% of ferric chloride at a dilution of 1.7 pounds of chemical per gallon of water. A Proportioneer pump delivers the chemical solution to the sludge. The lime variation ranges between 6.7 and 7.5%. To reduce the cost of lime conditioning, the plant uses a waste-lime slurry resulting from the production of acetylene gas from calcium carbide. Pebble lime costs, on a CaO basis, approximately $12 per ton, or nearly double the cost of carbide waste delivered.

The plant uses a battery of eight Conkey vacuum filters which produce a cake of about 70% moisture. For some years the operators have been securing the filter cloth to the drums of the filters in a manner that has reduced mechanical wear on the cloth and has saved some rope. They place the rope in only every third slot of the hardwood strips that divide the various filter segments and have discovered that this gives adequate seal. The cloth is then wired to the drum by wrapping it at the ends and wrapping its entire length with a continuous wire spaced at 3-inch intervals.

Lime-scale formation makes it necessary to give each filter an acid bath every few months. The operators do this with the cloth removed, the sludge removed from the pan, and the wire mesh washed. It calls for several carboys of commercial muriatic acid with inhibitor emptied into the filter pan. A portable acid pump circulates the acid through the valve head, tubing, decking, wire mesh, and filter pan. The wash is usually supplemented by a detergent bath and much brushing by hand to remove additional scale and grease.

Operation of the filters has confirmed that there is no economy in continuing large increases in chemicals to prolong the cloth life. The present cloths last usually 300 to 340 hours. Experience also has shown merit in a slower drum speed. The original filter drum speed was one revolution in seven minutes. One revolution in 11 minutes produces a drier and more uniform cake.



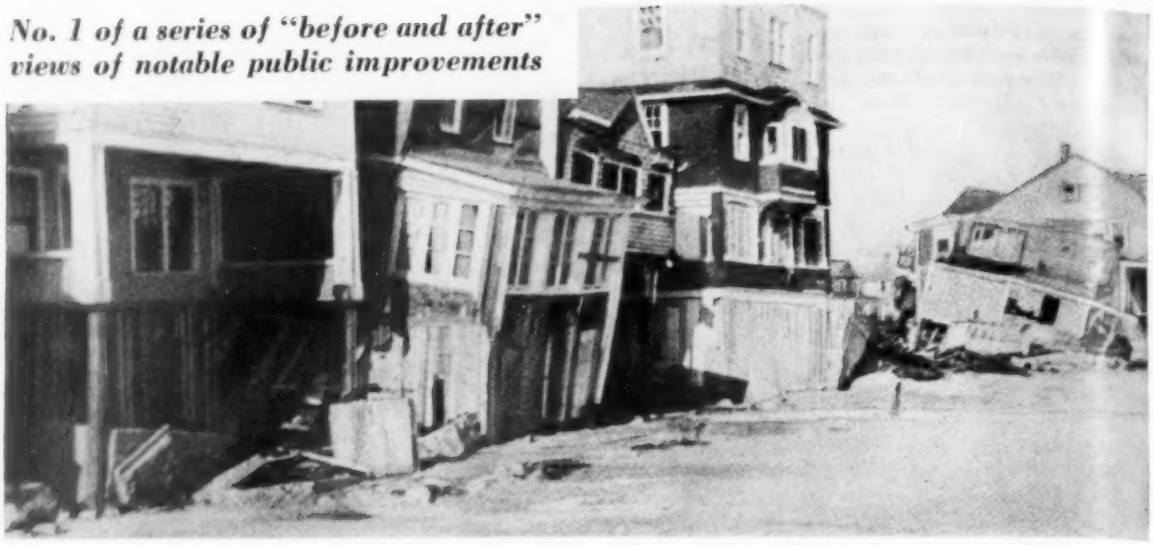
Final disposal of sludge is by multiple-hearth Nichols Herreshoff furnaces.

Complete disposal to a sanitary end product is the aim of the Detroit plant. Consequently, the filtered sludge goes to an incinerator for final reduction. The plant uses four circular multiple-hearth Nichols Engineering and Research Corporation furnaces. A system of belt conveyors feeds the incinerators and a Weightometer attached to the belt conveyor records the sludge delivery.

As mentioned previously, the plant operates under the direction of the Detroit Board of Water Commissions. Oscar A. Wagner is president. Other members of the Board include Carl Schaeninger, Edward Roney, R. K. Williams and Earl Bauer. Laurence Lenhardt is General Manager. Leo J. Garrity is Assistant General Superintendent. Fred H. Burley is Engineer of Sewage Treatment.

Here is an exterior view of the Detroit sewage-treatment plant.

No. 1 of a series of "before and after" views of notable public improvements



As Was—And As Is—

How a disaster was turned to a community's advantage is vividly depicted by these photographs of Ocean Beach Park, New London, Conn.

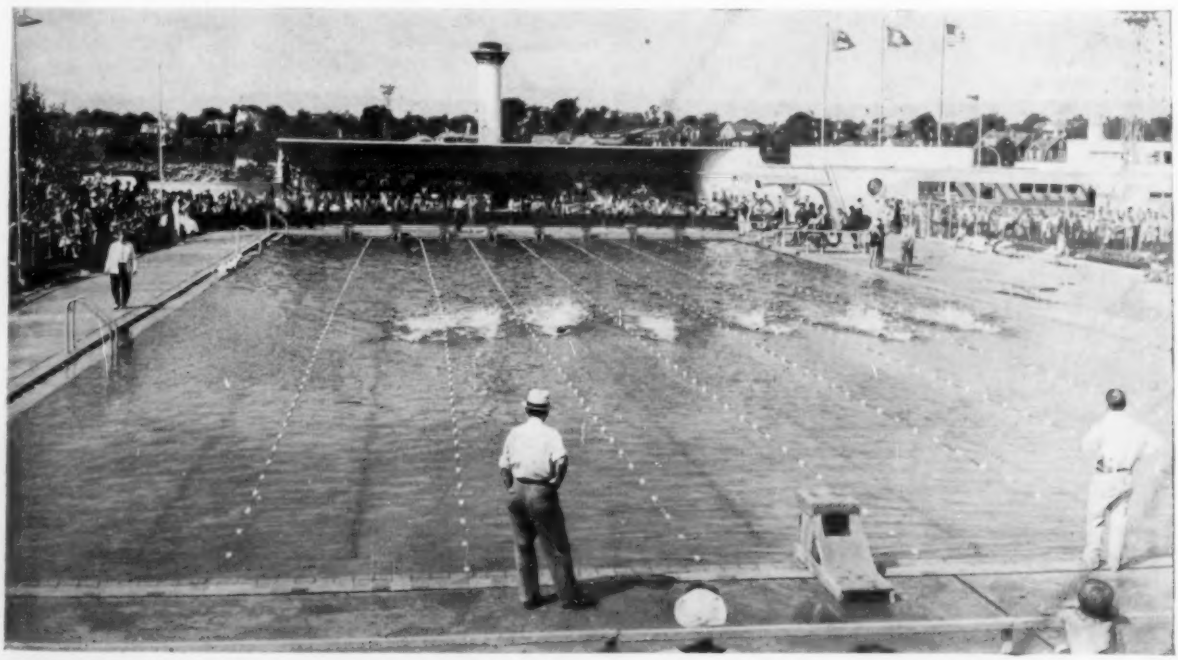
A HURRICANE in September 1938 severely damaged and destroyed many of the flimsy buildings on Ocean Beach off Long Island Sound. (Typical ones are shown above.) The original developers of the area, after pocketing their profits from the sale of property along the waterfront, had sold the narrow shoreline strip to the city as a public beach, leaving to it the problem of maintenance, repair and control. The beach was built up rapidly by summer cottage owners, but gradually its character changed and soon it became an amusement resort with stores, concessions, catch-penny devices and ballyhoo places. The former private dwellings became overcrowded boarding

houses and legal and illegal bathhouses. New London found itself with a typical degenerating beach slum area inhabited by too many people.

As a sufficient portion of the development was destroyed to warrant starting over again, the city authorities called in consulting engineers, W. Earle Andrews and A. K. Morgan, of New York, to prepare a report on the "Restoration, Expansion and Development of Ocean Beach." This report recommended extensive improvements, and urged the city to acquire the land shown in the area outlined by the heavy white line in the photograph at the bottom of the opposite page. The consultants recommended that the present beach be widened to the thin black and white line, and proposed extensive new beach facilities, including a board walk, swimming pool, bathhouse, public toilets, cafeteria, roller-skating oval, playground, picnic spots and large parking area.

The city acted upon the report's recommendations, and some of the results can be seen on this page. Ocean Beach Park was formally dedicated on June 30, 1940. Cost of land and original construction was about $2,500,000, financed by a bond issue of the city of New London, and other improvements have been added since. New London's citizens are proud of the well-managed facilities this popular beach offers, and consider it one of the city's finest assets. The view above shows a section of the boardwalk and beach. Below is the large, modern swimming pool, with observers watching an aquatic contest.

The Ocean Beach Park Board is responsible for the administration of the park. Revenues from the bath house, parking and various amusements and concessions are paying all expenses of the beach and also part of the amortization of the bonded debt.



High-Pressure Fog In Rural Fire Protection

Report of first-hand survey of 30 Pennsylvania fire departments using fog fighters that carry the water and throw 30 gallons of it per minute as high-pressure fog

By R. U. BLASINGAME
Head, Agricultural Engineering Dept.
The Pennsylvania State College
State College, Pa.

RECENTLY I had a conference with the County Agricultural Agent of Kent County, Mich. He told me an interesting story of a county-wide farm fire-protection organization in this county. This organization goes back about seven years. As I understand it, the County Commissioners purchased the fire engines and they are housed in the highway garages throughout the county. The firemen are all volunteers.

The county started out with two high-pressure fog-type fire engines and now has seven. This type of equipment was selected because each engine carries about 450 gallons of water. As a rule, there is little or no water available on farms for fire protection. Also, the fog-type engine uses very little water in extinguishing a fire. These engines usually have two fog nozzles, each requiring only 30 gallons of water per minute. They use water very sparingly, with a resulting minimum of water damage in extinguishing a fire—an important feature at a remote farm.

This Kent County project interested me and so I wrote to the thirty fire companies in Pennsylvania that own fog fire engines. I asked them for information concerning their experiences with and opinions about this equipment. Practically all of the fire chiefs answered immediately in very glowing and enthusiastic terms. Excerpts from several of these letters are quoted here. To further investigate this type of fire-extinguishing equipment for rural fires, I personally visited eight of these fire companies to obtain the information first hand.

Cooperation Between Fire Companies

In my investigations I found an excellent spirit of cooperation between neighboring fire companies. For instance, the fire chief of North Girard said that Girard had a large pumper. They both answered all fire calls in the vicinity. If one engine was better adapted, it was used. Now and then the pumper can also be used to keep the tank of the fog engine full.

At North East, Pa., the Fuller Hose Company had both types of fire equipment, and the same spirit of cooperation with neighboring fire companies that I found at Elizabethtown, Intercourse, Neffs Mills, South Williamsport, Three Springs, and Sheakleyville.

Fire Chiefs Say

Harry C. Bowser at Worthington, Pa., says with regard to the town's fog engine: "In our vicinity we do not have municipal water supply, therefore this type of truck is essential for us."

H. W. Woodward, President of Linesville, Pa., Fire Department, writes: "The truck carries an ample supply of water for a small fire and uses it sparingly.

"Water supply is always limited in rural areas; with this truck we do not have to worry about water shortage.

"We had one particular fire in the country six miles from town where we saved the remaining half of the house. We used about 1,000 gallons of water with the two lines of fog, and had no trouble in putting out the fire. Where we have driven up to the fire in a matter of minutes the fire is put out."

Here is what F. S. Beeman of Wysex, Pa., Fire Department, writes about his fog equipment: "Before purchasing this apparatus we looked around for some type of equipment that would make the best use of a small amount of water, as most of our calls would probably be away from a supply of any

High-pressure fog-type fire engines in action at the Pennsylvania State College.

size. We were most impressed by talking with the fire department at Endicott, N. Y., which had just purchased high-pressure fog equipment. They told us that they had answered every single-alarm fire with it and had never used all the water in their booster tank. Since we acquired our truck, our own experience has led us to believe that this is the best type of equipment for rural areas, if not one of the most effective for about any community."

Concerning the fog fire fighter of the Milford Township Volunteer Fire Company No. 1, Chief Edwin Moon says: "I heartily recommend the F.M.C. Fog system. We are entirely in a rural community without any specific water supply and find that this truck has met our needs fully. One case was a house fire, started by a cigarette that had been smoldering four hours before discovery. We put this out in 12 minutes with the 400 gallons of water we carried. I would say for any fire company, especially in rural towns and country areas, a fog truck is the thing.

Advantages

When I visited Chief Paul Shiffer of Friendship Fire Department, Elizabethtown, Pa., he showed me their ambulance, searchlights, several large pumping engines and a fog truck. "Since we purchased this fog fighter we have saved more property, and with less water damage, than we imagined possible. Properly applied, we extinguish a fire with one-tenth the conventional amount of water and one-tenth the water damage. In practically every call, the operator of the truck has had water in the two lines before the firemen handling them were in the building. I would advise any fire department, especially those in small communities without municipal water supplies, to study the advantages of fog equipment. High-pressure fog can be used on any class of fire with more coverage and cooling and less water damage than any type of fire equipment using water."

Fire Chief F. D. Merrell, of the Hallstead Fire Engine and Hose Company No. 1, writes me as follows: "We have had a fog fire truck in service for more than a year. This apparatus was purchased to give added fire protection without requiring an added water supply, as we already had apparatus capable of using our entire water supply. Besides Hallstead Borough we answer all alarms in Great Bend Borough and Great Bend Township. We have cut rural fire losses by the use of our new truck.

"For instance, we answered an alarm in Great Bend Township where, after a run of over a mile, we found a two-story frame building 40 by 20 feet had been struck by lightning. The ground floor was used as a garage and the second floor housed about 100 chickens. There was a false ceiling on the second floor composed of chicken wire covered with hay and chaff. The front half of the second story was wholly involved with flames coming from all windows. The flames were knocked down from the ground and then a ladder was raised to finish the job. The fire was entirely out in less than ten minutes with the use of only 125 gallons of water. Because fog trucks go into action so quickly, require fewer men to operate, cause so little water damage, and can do so much with so little water, we think that they are the answer to rural fire protection."

Private Corporation Serves As Community's Government

By RALPH CROSMAN

ONE of the notable current population changes is caused by city dwellers who are moving into outer suburban or rural areas and founding little communities, some of them for purposes of small-area farming, others for strictly residential purposes.

Some of these new settlements are growing haphazardly, without plan or forethought, but others are being built, from the very beginning, according to a well-considered design. A few of the latter types of settlements seem to be making history in community planning, settlement, and development.

One of these pre-planned communities is Pacific Manor, fronting on the Pacific Ocean, a few miles south of San Francisco. Here, on a tract of 200 acres, 175 homes, out of a total of 800, have been completed and occupied.

Pacific Manor Homes Association

Located in an unincorporated area, with no city government, no city council, and no mayor or city manager to look after things, the members of the new community faced the fact that if they were to avoid the evils of haphazard, unplanned growth and depreciated property values, they must act together. In order to do this they needed regulations to which all must conform. So they organized a private corporation, Pacific Manor Homes Association, headed by a board of five directors, and to this corporation were given ample powers to govern the community under whatever contingencies and conditions might arise—except so far as federal, state, or county law prevailed. The powers granted the Association by its articles of incorporation, its by-laws, and the protective covenants entered into included, among others: to improve, light, operate, and maintain streets, parks and open spaces; to care for and maintain unimproved or vacant property; to clean streets and provide police; to pay taxes and assessments levied on any property for the general use of the owners; to enforce tract restrictions; to purchase, lease, operate, and equip community buildings, nurseries, and recreational facilities; to furnish necessary transportation for owners; to approve or disapprove of the design of buildings, even to the color of paint to be used on them.

Annual "Lot Charges" Levied

To furnish the wherewithal to do all of these things, and many more not mentioned here, the corporation is empowered to levy an annual charge against each lot.

The filing of the articles of incorporation for this Association created something of a stir among those interested in town planning. Although officers of the corporation disclaimed any intention to sidestep or supplant the traditional forms of town government, the county clerk, with whom the papers were filed, said that the corporation is unique in his experience. And the editor of a leading newspaper in another California city devoted a long editorial to the plan, which he described as "something really new in city government."

Possibly one of the most notable things about the Pacific Manor development is the thoroughness and comprehensiveness with which the project has been designed, the long-range planning that has been done, and the safeguards which have been set up against community deterioration.

No unusual legal problems are involved, because the corporation to which administrative powers have been given will undertake no functions that are not lawful, needed, and in line with the community welfare and sound growth. There are no financial problems or risks, since the project has been fully financed by the development company.

The home owners are for the most part young people, more than half of them veterans financing their purchases through veteran or FHA loans. The homes are of the two- and three-bedroom type, with two-car garages and wide lawns, the houses embodying many new ideas in home construction. The business district is on the highway which skirts the ocean at this point.

Baltimore Breaks Airport Precedent

Baltimore's Friendship Airport brings out revisions in design that may set a new milestone in airport terminal layout

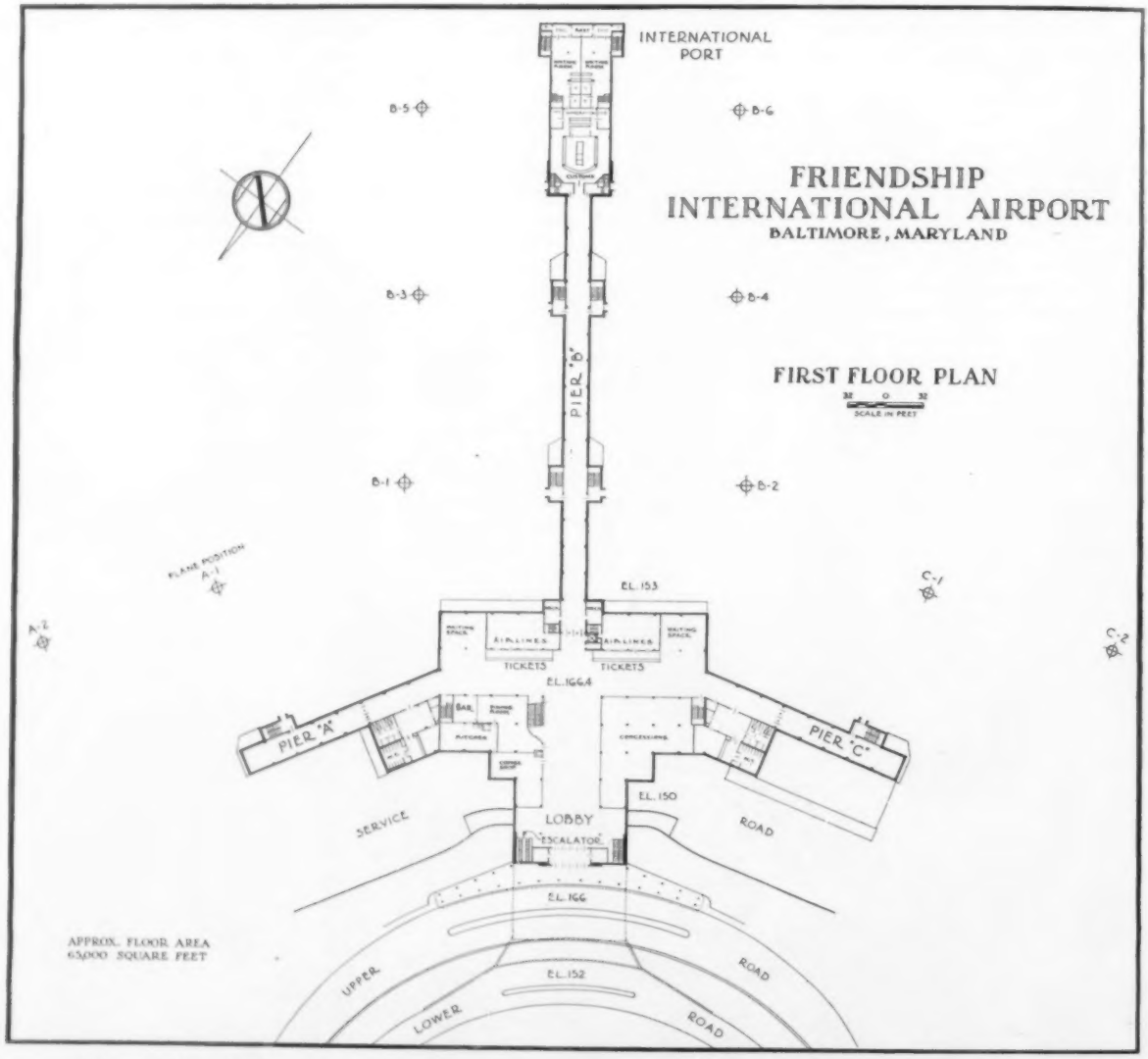
NOT long ago a design engineer for a large eastern city telephoned Everett Beavin, project engineer of Whitman, Requardt—Greiner Co. and Associates, Baltimore, Md., consulting engineers, and asked him if he had ever heard of an airport pier.

"The engineers for all the airlines here have been worrying me to death over it," he complained. "Personally it sounds like a harebrained idea, and I never heard of it. Do you know anyone who has experimented with it?"

"It may be," said Engineer Beavin, "but we don't consider it an experiment. We are using it today in the design of Baltimore's Friendship International Airport."

A pier for a plane is interesting, but it is not the only interesting feature of this precedent-breaking new international airport. The designers are introducing a new concept to terminal facilities that emphasizes not only the comfort of the passengers but also of the public that supports the airfield, and are employing a design that has revolutionized construction procedure in runway construction.

Consider the conventional air traveler today. While aboard the plane he receives almost regal service. Alert, well-groomed airplane crews care for him



A line drawing of the airport "piers" arrangement. These can be extended as traffic demands dictate.

assisted by gay, attractive hostesses. He receives meals, magazines, and other comforts aboard the plane.

But when he lands, what happens? He faces a long hike from the plane to the terminal building. He has to resign himself to a long wait for his baggage before he ever leaves the airport. If he wishes a ticket to another city, he must first go to one company's window and then another, casting around for a schedule that fits his requirements and possibly looking for available space. Once he gets his reservation his airline must give him close and expensive service, checking with him to see that his flight goes out on schedule.

Baltimore's new Friendship Airport will change these annoyances. The engineers plan on putting the service at the airport on a par with the excellence of the service in the plane itself.

Not Conventional Design

Conventional terminal design follows a horseshoe type of pattern. The larger the airport, the larger the horseshoe, and consequently the more scattered the airline facilities. Scattered around the horseshoe are the landing gates for the various airlines. If a plane is fortunate, it may be assigned to a space close by. If those are full, it may have to stop at one of the inaccessible aprons.

To overcome this, the engineers laid out three "piers" extending from the terminal building. The piers are approximately 500 feet long, and are at an angle roughly 45° with each other. In the angular openings so provided, space has been set aside for the incoming airplanes to land and discharge their passengers. Thus it will be possible for them to step from their planes, and walk only a short distance to a central building that handles limousines, taxis, and other transportation facilities. The engineers are also weighing the possibility of a gang-plank arrangement that will allow the passengers to walk directly from the plane to the pier. However, it seems that present differences in plane construction make this impractical.

The next annoyance that the new design will overcome is that of awkward baggage handling. The policy in the past has been to bring the baggage to the passengers, which although courteous, was nevertheless awkward, and required long waits. The terminal facilities have been so arranged that the passengers will go to the baggage. The piers will be arranged in a two-story system with the passengers on the top deck, and the baggage on the lower. The first thought was to handle the baggage by means of a conveyor belt. But this involved such a complicated set of conveyors that it was too confusing to be practical. With the plan finally selected, the same set of porters that take the baggage from the plane will wheel it along the lower passageway and hand it to the passengers. The passengers will go to the lower floor of the terminal building by escalator, and receive their baggage. The porters will naturally feel inclined to treat the baggage more carefully when they themselves have to hand it over to the owner. All city-bound transportation will depart from the lower level.

Plant-mixed soil cement is delivered by a Rex Motomixer to an inlet in the apron at the terminal building. This will prevent settlement at the edge of the concrete.

The terminal building itself will overcome many of the complaints that air passengers have so long registered. It will provide facilities for the passengers to sleep if they wish. Small roomettes are being built to hold a single person, in case he wishes to catch some sleep between plane flights. The service will include calling the person using the room in time to catch his plane. The ordinary rest-room facilities will be expanded to include barber shop, shower, and limited valet service.

The tracks of the "super-compactor."

The terminal facilities will have every facility arranged to encourage visitors. The roof will be constructed to be a promenade deck, and will have a glassed-in lecture room that will tell of the operation of the airport. Speakers will reproduce conversations between the tower and the plane. Duplicate lunch and rest rooms will be available so that large groups can be cared for.

Immigration Rooms

An important consideration in the operation of this international airport is its immigration facilities. The incongruity was recognized of bringing people into this country and herding them around like sheep before releasing them in a beautiful, well-designed airport-terminal building. Most air travellers from abroad are, as a rule, influential people, and an effort should be made to make their first contact with this country one that reflects efficiency as well as attractiveness.

To care for these visitors from abroad, the engineers have reserved two of the berths at the forward end of the center pier. At this end of the pier two waiting rooms are being built, each with comfort stations and with facilities for hot coffee and sandwiches. The rooms will be decorated tastefully. Passengers from one plane may not mingle with those from another until passed by the Public Health Service. Facilities for the customary immigration, customs, and plant inspection also are provided. In any case the visitors cannot leave the rooms until they have cleared all their papers and credentials. When they leave the rooms, they will be free to go and come as they please, as there will be no more immigration requirements to meet.

An important consideration that takes the airport off the shoulders of the city as a financial liability is the unique lease that the city may enter into covering its management. There probably will be formed among the airlines operating out of Baltimore an operating corporation. This corporation may lease the airport from the city at an agreed sum. This figure will be based on the cost of operating the port, and will aim at covering operation, interest, and if possible, some of the principal. The operating corporation will handle all services for all airlines operating out of Baltimore, much in the manner that the railroads do when operating a union terminal, and thus will simplify the traveler's problem.

Engineering features of the airport runway construction are equally challenging. The airport will receive planes that probably will weigh 200,000 pounds with the possibility of strengthening

the paving to accommodate 300,000 pounds. With conventional designs the pavement slab would take great depths when laid on tthe relatively unstable sandy soil characteristic of the area. However, the engineers recognized that it was the subbase rather than the slab that required attention. If the subbase were firm, the slab could be little more than a wearing and frost-protective surface.

Sandy soils are hard to pack, as many have learned who have tried running such conventional equipment as sheepsfoot rollers over them, and have seen them churn the sand rather than compact it. The engineers proceeded on the theory that entrapped air within the sand that had no opportunity to escape produced this difficulty. A heavy steady pressure, applied slowly and without forming a crust, would squeeze this air out and solidify the base to a depth sufficient to make a light, flexible, asphaltic-concrete wearing surface adequate.

To build the base, the specifications called for laying in the sandy gravel in 8-inch lifts, rolled four times with a sheepsfoot roller applying a load of 685 pounds per square inch through the rollers, or nearly three times the usual load. If more than four passes are required, the contractor is paid at the rate of $8.50 per hour for the work.

Used Super-Compactor

On top of this, when the fill is to finished grade, is applied the latest development in soil-compaction, Baltimore's big "super-compactor," with a weight range varying from 40 to 200 tons. This big roller designed by O. J. Porter, Sacramento, Calif., consulting engineer and soils expert, carries its load on four pneumatic tires. Two tires are mounted on one axle in each of two load boxes which are ballasted to the desired weight. Each tire is nearly a yard wide and 8 feet high. The two tow boxes, each 20 feet long and more than 7 feet wide, are connected with the bars and tongues which allow free oscillation, assuring uniform ground pressure and compaction.

As this roller moves slowly up and down the runway, it squeezes the air out of the soil, and forces the soil particle into a solid, load-bearing mass. Densities are increased by approximately 15% in cut areas.

The soil on this airport consists of non-plastic sandy material containing 5 to 25% of particles passing the 200-mesh sieve. The cuts were compacted by making eight passes of the super-compactor, loaded to 150 tons. Densities from 100 to 109% were obtained on test areas to depths of 5 feet. The over-all test program on the project includes numerous test pits to depths of 4 and 5 feet.

High Compaction Results

Mr. Henry G. MacDonald, construction engineer for Whitman, Requardt-Greiner Company, who represents the city of Baltimore on the project, furnished the following summary of the tests:

High compaction was obtained to a depth of 4 to 5 feet. Fifty per cent of the tests on the sandier portion of the material showed densities of 105% or more of the Modified AASHO Standard. Eighty per cent of all tests made after the super-compaction treatment showed densities in excess of 100% of the same modified standard. Only 20% of the tests showed densities slightly less but approaching 100%, and most of these tests were on the finer materials.

Most of the cuts and fills for the initial grading program had been constructed to approximate grade prior to putting the super-compactor into use. The fills, which had been previously compacted in 6- to 8-inch layers with a heavy standard sheepsfoot (500 psi), generally settled 2 to 4 inches under eight passes of the super-compactor; but numerous loose and weak areas were encountered on the runways, where the settlement ranged up to 12 inches. These exceptionally weak areas undoubtedly could not have been detected without using the super-compactor, which, in effect, pretested every square yard of subgrade prior to placing the pavement.

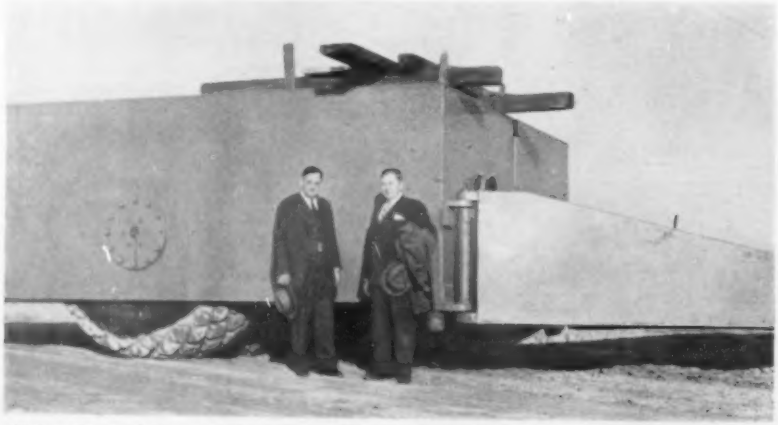
Uncovered Clay Lenses

The cuts usually settled 2 to 12 inches under eight passes of the super-compactor; however, a considerable number of unstable areas developed where clay lenses were present within 3 or 4 feet of the subgrade. These areas, many of which were only 8 to 20 feet in diameter, were well outlined after four passes of the roller, as the underlying weak clay caused heaving and weaving under the heavy compactor. After four passes of the roller, the inferior material was removed with scrapers and deposited in the field areas beyond the shoulders. Selected material was brought in from cut areas to bring the entire subgrade area back to grade. Four additional passes of the super-compactor were then made, lapping the roller about 80% to compact the subgrade prior to placing the 7-inch bituminous stabilized sand base course, which was also selected from cut areas on the project.

Well-graded commercial aggregate is being imported for the 3-inch, which consists of asphaltic concrete placed in two courses. The tests at Baltimore conclusively proved that high densities of 100% or more can be obtained to a depth of 4 or 5 feet with the super-compactor if the material consists of granular soil of a pervious nature. The rolling was carried out at the speed of about 1½ mph. A slow speed is, of course, desirable to allow sufficient time for the air to escape.

With this thick layer of compacted granular base at least 4 feet 5 inches thick, the engineers feel that they can use a flexible pavement composed of asphaltic concrete only 10 inches thick to support the big airplanes expected here. This compares with a combined thickness of some 18 inches that might have been required had more conventional designs and construction methods been used.

The compactor purchased by the city will be used after the port is completed to roll occasionally over those portions of the runways that do not receive their normal share of traffic, and may need this rolling to retain the strength of the asphalt.



Major General Moore, Director of Aviation for Baltimore, and O. J. Porter stand in front of the super-compactor, used on the Baltimore airport. Mr. Porter, Sacramento, Calif., consultant, developed the big roller.

Rubberized Streets

Akron, Ohio, experiments with a synthetic-rubber admix in its asphalt street-paving program. A more resilient and longer-lasting surface is anticipated

The new mix calls for 1,200 pounds of powdered rubber to 3,000 gallons of asphalt. Here the workmen are adding the rubber.

AKRON, Ohio, has a synthetic-rubber street on trial in one of its busy downtown areas. The rubber, blended with the asphalt, is expected to produce a more nearly waterproof surface than does the conventional asphalt street. Officials also anticipate a more resilient surface that is longer-wearing and more resistant to cracking in cold weather.

Busy Thoroughfare Selected for Testing Ground

In making this test, Mr. G. Soderberg, Akron's Highway Engineer, selected Exchange Street, a busy thoroughfare in that city. The experiment was initiated at the suggestion of the Goodyear Tire and Rubber Company's research department. The rubber was supplied without cost.

Mix Specifications

The specifications used called for 1,200 pounds of finely powdered rubber to 3,000 gallons of asphalt, plus crushed rock ordinarily present in the standard hot mix. This produced 180 tons of material. The rubber was blended with the asphalt at a temperature of about 300° F. After remaining in the mixing tank overnight, the mix was transported to the job and rolled down to make the street surface.

England and Holland have used roads like this for some time. One of the rubberized roads was used by the advancing German armies in the 1940 blitz. This particular road attracted the attention of P. W. Litchfield, Goodyear chairman, on a visit to Holland after the war.

New Rubber Use

Mr. Litchfield saw this type of road construction as a possible means of opening a new field for synthetic rubber use. After consultation with Goodyear and city officials, the present experimental program was adopted. Two small sections of the city streets where traffic is not heavy were paved with the blend about a year ago. Engineer Soderberg reports that they are standing up well.

The rubberized mix spread without difficulty in the Barber-Greene paver.

A Buffalo-Springfield roller compacts the mix in the same manner as ordinary asphalt surfacing.

Savannah Water Supply Ready for Industry

A new water-treatment plant, tailor-made to a growing industrial demand, supplements a diminishing artesian-well supply threatened by salt-water intrusion

INDUSTRY needs water. Savannah needs industry. Therefore, Savannah needs water — the type of water that industry can use to good advantage. So reasoned Thomas M. Johnson, Chairman of Savannah's Industrial and Domestic Water Supply Commission. So reasoned the people of Savannah also, and they stood solidly back of him when he asked for a new 40-mgd water-treatment plant drawing from a surface supply that furnishes a soft, easily handled water that can be used to economic advantage in many of the industrial processes here. So appreciative were they of his leadership that they named him by an overwhelming margin for the annual Lucas Trophy, awarded for the outstanding contribution to the city improvements.

For years, Savannah has drawn on artesian-well supplies for both domestic and industrial use. As industry continued to thrive in this seaport city, the demand for water grew, and as is the case so often in coastal areas, with the heavy draft of ground water the threat of salt-water intrusion became more real.

Consequently, J. E. Sirrine Company, consulting engineers of Greenville, S. C., weighed the possibilities and came up with the conclusion that an alternate surface supply could be developed in what is known as the Abercorn Creek branch of the Savannah River. This particular watershed had many good characteristics. It was not too far from Savannah, yet it was on high enough ground so that the water was well above the salinity point caused by ocean tide.

John B. Cabell, resident engineer for the J. E. Sirrine Engineering Company, points out features of the new plant to T. C. Earl, Water Superintendent.

The J. E. Sirrine Company designed and supervised the construction of the plant itself.

The plant draws water from the drainage area through a raw-water

An aerial view of the new Savannah water-treatment plant in the finishing stages of construction.

pumping station that has five vertical-shaft pumps, each rated at 9,375 gpm at 89-foot head. This station delivers the water through a 48-inch steel line. This pipe, furnished by the Bethlehem Steel Company in 40-foot lengths, is protected both inside and out with Koppers Company Bitumastic enamel and jointed with Dresser couplings. Consequently the engineers have every reason to anticipate a long service-life from it with negligible maintenance costs.

Breakpoint Chlorination

When the water enters the plant, it is measured with a Simplex venturimeter with a 24-inch throat and receives an initial application of chlorine that pushes the residual past the breakpoint. The water then receives an application of lime slurry for pH control and liquid alum for coagulation, and proceeds to the three flash mixers.

Two large Wallace and Tiernan chlorinators supply the prechlorination dose. A pair of smaller chlorinators furnish a residual chlorine dose for the water as it enters the service water-pump suctions. Omega dry feeders apply the lime to the water. The liquid alum is applied through the use of a Rotometer. The alum is purchased locally from the General Chemical plant located here.

Flocculation and Settling

As the water leaves the flash mixers, it proceeds to the Dorr flocculators. The water makes three passes through this flocculation chamber as the floc forms. It is held here for a half hour.

From here the water proceeds to a set of four settling basins. When empty they have capacity enough to hold the water for 3¾ hours at rated capacity. These basins have no automatic method of sludge draw-off, but are, instead, flushed clean periodically.

The water from the settling basins then goes to a set of eight filters with Wheeler false bottoms. The filters, using Roberts Filter Company control tables, have a unique backwashing arrangement that allows half of the filter to be washed at a time. The filters use sand for the filtering medium.

"Viewing Well"

As the water passes from the clear well in the plant, it goes through a "viewing well" illuminated with recessed fluorescent lights. At the base of this well is the Savannah city seal, in a depth of about 10 feet of water. Water Superintendent Thomas C. Earl, who is also Secretary of the Water Commission, insists that the city's seal should be clearly visible at all times. Lime is added to the water to bring the pH back to approximately 7.7. The plant's clear well is connected by an equalizing header to a 2-mg prestressed concrete-storage reservoir. There is also a surface steel storage tank which floats on the distribution main that has a useful capacity of 2 mg.

As mentioned previously, the plant is located at a relatively high elevation. As a matter of fact, it is the highest point in Chatham County, where Savannah is located. From this steel reservoir, the water can be delivered under 20 psi minimum pressure at the far end of the line. Four De Laval service-water pumps, each capable of pumping 8,700 gpm at 57-foot head, supply the water if the level in the storage tank drops.

The plant itself shows a great deal of architectural study. It consists of concrete blocks faced with an artificial cut stone. This stone actually is a dense concrete with a highly polished face. Both the concrete blocks and the facing are made locally.

The plant will cost $5,200,000, including pipelines and certain improvements to the distribution system. The plant is expected to support itself through the sale of water. The water rate to industry, incidentally, has been established at a figure low enough to make it attractive to the industries now using well water. In addition, it is soft, non-corrosive, and easily treated for industrial use.

The new plant was constructed by the Virginia Engineering Company, contractors, under the supervision of J. E. Sirrine. John B. Cabell was resident engineer.

Milwaukee City-Suburb Fight Still On

By JOHN E. HUBEL

FOR several years attempts have been made to consolidate the suburbs adjacent to Milwaukee with the city. As in other large cities, it is claimed that the citizens of half a dozen suburbs around Milwaukee obtain benefits from their propinquity which they could not enjoy, except at great expense, if the villages and cities were located some miles away from Milwaukee. In one or two cases suburbs have threatened to build their own water works, which would not bother Milwaukee city officials. However, the suburbs have found costs prohibitive for such separate water works. In the matter of sewage it is different, as Milwaukee County has a metropolitan sewerage commission, controlling much of the county system.

Now it is proposed to transfer the public library, located near downtown Milwaukee, and the Milwaukee public museum, to the county. No suburb in this area has a large library or museum. The citizens of the outlying districts outside of Milwaukee city limits make use of the Milwaukee library and museum. The suburbs are vigorously opposing the transfer. Three of them are sure they do not desire such a transfer while 15 other communities in the county want more time to think it over. The obstacle, of course, is the additional taxes which might be assessed on the suburbs, all of which boast of lower tax rates than are now in effect in Milwaukee.

In discussing the matter, the president of the Milwaukee Affiliated Taxpayers' Alliance, Lewis Stockinger, had this to say: "Milwaukee has reached a point where it can no longer continue to pay an unfair share of the cost of providing library and museum service for the entire county." The city librarian, Richard E. Krug, and William McKern, director of the museum, state that the only reason for the proposed transfer is to enable the library and museum to serve a larger community more efficiently. In this connection Krug said: "There are many differences in the quality of library service available throughout the county, and only if the suburbs accept their responsibility can a minimum of library service be provided for all of the people."

The city attorney of West Allis, the largest suburb, with a population of about 37,000 or more, objected to taxation on an assessed valuation basis for the library and museum services, and wants a more equitable relationship to be set up between the benefits received and the amounts paid. "It is legalized larceny," he claimed, "to expect West Allis to pay for services it does not want and may or may not use."

A representative of another suburb, Wauwatosa, with a population of about 28,000, thinks Milwaukee is trying to put one over on the suburbs by choosing the library and museum for the first transfer to the county, as these would appear to be the least objectionable, but believes it is the intention to transfer other facilities of the city to the county once an opening wedge has been provided.

And so the argument goes on, with the end probably not in sight this year.

Trees on Their Mind

Shade Tree Commission of Kent, Ohio, administers effective and economical model program

By ARTHUR L. GREENE

IF KENT, Ohio (population 12,000), doesn't become known as the Tree City of America, it won't be for lack of trying. City fathers and public-spirited citizens are rallying about trees as prime factors for community glory.

Home of Kent State University, this typical American college town has been eminently successful in carrying out a novel program of civic betterment through shade trees. So successful has it been that it is setting a pattern for other small communities which formerly felt that systematic tree care and planting were beyond their official means. It may effect a major change in the American scenery as its fame spreads from Ohio to other environs.

The epic tree-mindedness of Kent's local populace has business, as well as aesthetic roots. The city is headquarters for the Davey Tree Expert Co., pioneer in tree-care work and largest organization of its kind in the world.

Two company officials, in fact, are members of the Shade Tree Commission and have sparked the city's "Back to the Trees" movement. They are D. Q. Grove, Davey's chief field supervisor, who is Commission chairman, and M. W. Staples, company field supervisor and Commission secretary. "Lay" member of the Commission is Paul G. Sellman, gas station proprietor.

Above: East Main Street's traffic and street lights were obscured before the public-safety tree-trimming project. Below: With foliage clipped uniformly, the street itself looks trimmer and is safer for both driver and pedestrian.

Much Power—Economically Administered

The Commission administers the tree program, creates and polices its own rules and regulations with absolute authority under powers granted by a blanket ordinance passed by the City Council in 1924. It was inoperative during the war years, but upon conclusion of hostilities the plan was revived and attained its present status.

In 1945, it was put on a basis of regular appropriations. This year, an economy-minded city council voted the Shade Tree Commission more funds than it asked—proof enough that city officials and taxpayers alike think a lot of its accomplishments. The tree program is geared to a cost low enough to make other municipalities whistle.

Economy is the keynote of the program—undoubtedly no small factor in winning unanimous nods of approval. Under the Kent Plan, an annual budget of $3,000 to $4,000 is adequate for a city of its size, as compared with the $15,000 to $20,000 cost for even a very modest park department. In 1947, about $7,000 was spent. This was because community trees had been badly neglected during the war. The Commission feels its program can be adopted in toto or adapted to the needs of any town, village, or city under 50,000 population.

Kent's Approach

The idea behind the Kent Plan is simple enough. Special maintenance equipment and a year-round tree-care force that includes qualified experts are extremely costly. With proper and systematic planning, the work can be

done by a qualified outside agency. A major difference between Kent's and other small communities' handling of arboreal projects is that the former has complete jurisdiction over tree care. Most communities of modest size put the burden of planting, care, treatment, maintenance or removal of street trees upon the individual home owner or include tree care with the other duties of an overburdened street department.

Then, too, they are inclined to handle tree matters on an emergency basis as problems crop up, rather than embark on an annual program, the cost of which ordinarily is prohibitive. The Kent formula provides for the day-to-day functioning of a group of responsible commissioners who can act promptly and with authority as well as follow through on civic projects.

Strict Rules

The Commission has formulated strict rules on what kind of trees may or may not be planted.* It regulates utility-company practices both overhead and underground within municipal limits, and requires that one of the commissioners be present when underground construction necessitates cutting of tree roots. Utilities, contractors, and city employees must tunnel under all major roots to a distance specified in each special case by the Commission. Home owners must petition for permission to plant street trees. This is generally granted if the desired tree is the same kind as those predominating on the particular street and meets requirements as to shape and size. Once permitted, the tree must be planted at a specified distance from its neighbors, ordinarily from 45 to 65 feet, but never less than 35 feet.

Relation of Trees to Lighting and Traffic

Public safety ties in with this civic improvement, as the Kent Plan was designed to improve street-lighting and traffic conditions as well as add to eye appeal. Better street lighting is recognized as a deterrent to crime and juvenile delinquency. Originally launched as a five-year plan, the initial phase of the tree-improvement project has been virtually completed in three years. This has resulted in elimination of all known tree hazards, improvement of all street lighting, including traffic signals, and reduction of traffic and pedestrian obstacles. According to the Commission, some 80 hazardous trees have been removed and every street light cleared, and about 3,500 street trees have been pruned to a minimum height of 15 feet over streets and 12 feet over sidewalks.

Pests and Diseases

For the remainder of 1948, the Commission is devoting its attention to bettering maintenance of present trees and is taking aggressive measures for control of insect pests and diseases, notably the Dutch elm scourge. It is planning to spray all elms growing on public streets and to conduct a public-information campaign inducing property owners to take similar action in curbing the elm-bark beetle, carrier of Dutch elm. Sanitation measures, including destruction of diseased elms, also are projected. An annual planting program to cover the entire city will be launched in 1949 and extended over a five-year period.

Under the proposed 1949 planting plan, replacements will be made in the variety of tree predominating on a particular street. New streets will be planted with trees of uniform size and of a restricted variety. Uniform spacing will be the rule, but this will vary with existing conditions. The average small town or city should be content with eight or ten of the hardiest varieties, Kent's tree planners say.

Expert Advice

Commissioner Staples, through voluminous correspondence, has been spreading Kent's tree gospel to communities throughout the nation. He advises them to activate and complete the three-year street-lighting program for public safety before embarking on an ambitious tree-planting schedule, and he stresses that the very first step must be the naming of a local commission.

"Only public-minded citizens who will serve without pay should be nominated to the group, which should have a maximum of five members," he says. "At least one and preferably two of them should be persons whose training and experience give them knowledge of trees in relation to public welfare. If you can't find an expert in your city, don't hesitate to hire one or consult the state forestry department."

* Most communities merely recommend desirable street-tree plantings. Kent goes a step further by actually forbidding planting of certain popular shade trees. Some have root systems likely to plug sewers or other underground installations. Others drop obnoxious fruits and nuts and clutter up sidewalks, streets, and parking strips. Evergreens lose their beauty when pruned to conform to street needs. Brittle-wooded trees are easily damaged during storms.

The Commission has selected the Norway maple, Schwedler's maple, red maple, gingko, honey locust, sweet gum, tulip tree, oriental plane, scarlet oak, red oak, pin-oak, and American and European linden as those best suited to Kent's street needs.

A rock-boring machine helps the East Ohio Gas Company by-pass tree-roots when replacing a gas line, and M. W. Staples, of Kent's Shade Tree Commission, examines the boring to make sure that the tree-root system has not been injured.

Kitchen Garbage Disposal Means Sewage-Plant Expansion

Digestion tanks such as these, as well as oxidation units and chlorinator facilities, will be overtaxed, New Jersey officials think.

By **HARRY P. CROFT**, *Chief*
and
ROBERT S. SHAW, *Principal Engineer*
Bureau of Engineering and Sanitation
N. J. State Department of Health

PROPONENTS of the use of sewerage facilities for ground garbage take the position that ground garbage presents no insurmountable problem to sanitary engineering and that adequate sewerage facilities should be provided to handle ground garbage.

Such a position is held in most of New Jersey at this time. More than 75% of the municipal sewage-treatment plants in the state are inadequate in capacity or in the degree of treatment provided by them for the disposal of the wastes now being discharged into them.

We of the State Bureau of Engineering and Sanitation are of the opinion that the public should be told that it is going to cost a lot of money to build, maintain, and operate treatment plants for the disposal of ground garbage. We believe that the average person who buys a garbage grinder for his home has no conception whatever of the ultimate disposal problem. We doubt that even some intelligent, well-meaning leaders of public opinion who are clamoring for stream pollution abatement realize that the home garbage grinder represents an increase in stream pollution; that, at best, it means additional investment of public funds in sewage-treatment plants. The estimated cost of needed sewerage facilities has already reached staggering proportions. If the public were fully informed and then recorded its approval and supported the required expenditure there probably would be little need for concern in this matter. But the public is not informed and it probably will not understand until an enforcement agency, such as the State Department of Health, steps into the picture and requires additional treatment facilities to provide for ground garbage.

Real Problem Involved

It is not the purpose here to oppose the use of garbage grinders or to promote them; rather it is the purpose to bring to light the fact that a real problem is involved.

Ground garbage is principally organic matter, as is domestic sewage. Usually it can be discharged into the average household plumbing system without causing stoppage. Most well-constructed public sewers will convey it without any serious problems, although difficulty must be expected where sewers are laid on lower than recommended grades and in any sewer or appurtenance where sewage solids now settle. Difficulty must be anticipated in some pumping-station wet wells because much of the ground garbage is readily settleable, but those difficulties are not excessively costly to obviate.

Ground garbage lends itself to standard treatment processes of sedimentation, digestion, oxidation, and chlorination. Gift chambers will settle out more organic matter if ground garbage is mixed with domestic sewage so that grit disposal will not be quite so simple. Some small increase in settling-tank capacity may be required, but it would not be appreciable. *But when digestion or oxidation or chlorination are encountered, appreciable expansion of sewage-plant capacities becomes essential.* Most responsible authorities seem to agree that at least 100% increase in sludge-digestion capacity is advisable. The literature on the subject is less conclusive in the matter of the required increase in capacity of oxidation units, but it indicates that an increase of as much as one-third may be advisable. A 50% increase in chlorinator capacity is indicated in some instances.

Plant Expansion a Certainty

Municipalities owning sewage plants now overloaded or approaching their capacities obviously must anticipate an additional investment in plant expansion if garbage grinders are to be permitted. Surely provision must likewise be made in new plants if ground garbage is to be treated with the sewage.

It has been said, perhaps with merit, that if garbage grinders were installed in every home in a community there would be a net saving in public expenditures. But that is certainly not the situation to be anticipated in many New Jersey communities at this time. Most of our communities which have sewerage facilities also have some garbage collection and disposal facilities. Many have invested large sums in collecting equipment and incinerators. And even though the incinerators may be adequate, the same taxpayers will be saddled with additional sewage-treatment plant costs if additional plant capacity is to be provided for garbage treatment. The proponents of home garbage grinders would reply that the investment is worth all of these costs and more. Competition has entered the field so that acceleration of sales is to be expected. The problem is no longer hypothetical—it is real, and it should now receive the deliberate consideration of every municipality operating public sewerage facilities.

The alternatives are for the municipalities in New Jersey to (1) permit garbage grinders, or (2) prohibit garbage grinders. If the grinders are to be permitted, expansion of treatment-plant capacities must be anticipated. If a municipality prefers to prohibit grinders it may do so by state statute:

Section 40:63-7 of the Revised Statutes of New Jersey provides that the governing body of a municipality may, by ordinance, fix and prescribe such conditions and restrictions as to connection with and use of sewers and drains in the municipality, as it may deem proper and necessary.

The problem is squarely up to the municipal governing bodies. Those who may choose to enact ordinances prohibiting garbage grinders should not overlook the matter of enforcement, which appears to be not too simple.

The Bureau of Engineering and Sanitation of the New Jersey State Department of Health is of the opinion that, despite all its admitted conveniences and perhaps other merits, the home garbage grinder is a creeping menace to the solution of the already serious problems of stream-pollution control in this state.

Turn to page 11 for an analysis of this article.

What Other State Departments of Health Think About Kitchen Grinders

BECAUSE the state departments of health are powerful advisory agencies, their attitude toward kitchen food-waste disposal—the installation of garbage grinders—is an important factor influencing acceptance of this household convenience by the individual municipalities.

THE AMERICAN CITY invited the departments of health of all states and the District of Columbia to comment on the New Jersey attitude presented in this issue by Harry P. Croft and Robert S. Shaw. Twenty-nine states responded.

That only 29 of our 48 states commented on this crackling subject means that the departments of health of 19 states (1) don't wish to commit themselves publicly; (2) have no opinion to offer; or (3) just didn't get around to writing a letter, which would appear to mean that they take the subject lightly.

What do these various opinions add up to? How many oppose the use of the grinders because of health factors? How many feel that they present no insurmountable problems to the cities?

Of the 29, seven feared that the garbage grinders represent a dangerous factor in the maintenance of adequate sewerage facilities. One stated flatly that he had no comment for publication. The remainder, however, were not apprehensive. In general, the opinions can be expressed as follows:

(a) that their use is not now widespread enough nor is it expected to be sufficient in the near future to warrant concern to the city's sewerage system. (Georgia, Illinois, Louisiana, Maryland, Minnesota, Missouri, Nebraska, New Hampshire, Ohio, Rhode Island, Texas, Tennessee)

(b) that an ordinance banning the grinders is impractical and probably more expensive to enforce than the cost of the added sewage facilities (Florida, Kentucky, Oregon, Rhode Island).

(c) that the use of the grinders is a step forward in public sanitation, since it helps solve fly and rat problems (Florida, Kentucky).

(d) that a city able to afford grinders on a large scale certainly should be able to afford adequate sewage treatment (Florida).

(e) that those cities using sewer service charges could certainly adjust those charges to compensate for the added solids load (Idaho, Michigan, Minnesota, Ohio).

Let us look closely at those who question the use of the grinders. Arkansas' F. L. McDonald, Chief Sanitary Engineer for the State Board of Health, thinks that if grinders are widely used the problem of sewage treatment will be greatly increased. His department feels that this matter should be brought to the attention of the general public so that they will realize the problems involved.

In Idaho, H. C. Clare, Director of Public Engineering, also sees a danger of overloading existing plants. Mr. Clare is one of those who recommends adjusting the sewer service charge to meet the potential increase in sewage treatment.

Kansas' Chief Engineer, Dwight F. Metzler, states that the load on the sludge digestion facilities will be doubled while the BOD of the sewage will be increased about 40%.

Maine's Director of Sanitary Engineering, E. W. Campbell, feels that if the practice becomes widespread, more and larger treatment plants will be needed.

In North Dakota, Jerome H. Svore, Director of the Division of Sanitary

COURTESY OF THE LADIES' HOME JOURNAL

"Hello. Using your automatic garbage-disposal unit for the next few minutes?"

Engineering, feels that it is the duty of state health departments to advise municipalities that wet grinding of garbage and disposal through the sewers means just that much more organic material to handle.

Virginia's Director of Sanitary Engineering, Richard Messer, and West Virginia's Associate Engineering, R. A. McCall, both agree with Mr. Croft and Mr. Shaw that if this practice is carried on to any considerable extent, many sewage-treatment plants will be overloaded.

Grinders a Step Forward

Florida, however, is less fearful. David B. Lee, Director of the Florida State Board of Health, states that any problems that the grinders present are definitely signs of progress. Mr. Lee argues that if a community can afford grinders in sufficient number to cause sewerage trouble, it certainly can afford proper sewage treatment. The cost of enforcing the prohibition, he states, would run higher than the cost of adequate treatment.

G. R. Frith, Public Health Engineer for the State of Georgia, states that unless the price of the grinders is reduced markedly there will be no problems for at least 20 years.

C. W. Klassen, Chief Sanitary Engineer of Illinois, states that he doubts that the cost of grinders being what they are, they ever will be a serious problem to average treatment plants. He feels personally that they represent a desirable means of garbage disposal and has had one in his home since 1934.

Indiana's Director of Environmental Sanitation, B. A. Poole, agrees that if the grinders are accepted on a large scale, we may lose ground in stream-pollution-abatement programs. He feels that there is some justification for municipalities purchasing garbage grinders and providing for their installation in each establishment producing garbage at the time treatment facilities are placed in operation.

Doubts Enforcement Possible

In Kentucky, F. C. Dugan, Director of Sanitary Engineering, seriously questions whether an ordinance prohibiting the grinders can be enforced. The general use of the grinders, he points out, will be of assistance in eliminating the fly and rat problems in many sections. He relies on the ladies' having considerable voice in the adoption or prohibition of a household convenience like this. Although he feels that more and larger treatment plants will be needed if the use of the grinders becomes widespread, he does not feel that this is a reason for opposing their use.

John H. O'Neill, Louisiana's Director of Public Health Engineering, feels that the grinders present no problem at present. All plants and disposal facilities have adequate capacity to meet the small load that the grinders present.

Maryland's Chief Engineer, George L. Hall, is not greatly concerned about the grinders. He also feels that it will take some time before the overloading of the sewage-treatment works results.

Michigan's W. F. Shephard, Chief of the Division of Sewerage and Sewage Treatment, views the grinders simply as another load comparable to more residences. He also sees the problem of enforcing a grinder ban as troublesome. He joins those who recommend adjusting the service charge to meet any added organic load.

In Minnesota, Herbert M. Bosch, Chief of Environmental Sanitation, advises that the question of grinders has not been brought to the attention of his department as a problem. He, too, likes adjusting the service charge to meet any treatment costs.

No Problem for Many Years

Missouri's Director of Environmental Sanitation, W. Scott Johnson, sees no grinder sewerage problem for many years. Further, the use of laboratory analyses and flow measurements, both routine determinations and those used as the basis for sewage-plant design, will detect any increase in the load and permit modifications in operation and design in ample time to prevent serious problems arising.

Likewise, in Nebraska, T. A. Filipi, Director of the Division of Sanitation, feels the problem is not important and the day when ground garbage will overload the sewage-treatment plant is far off.

In New Hampshire, Director of Sanitary Engineering, Leonard W. Trager, expresses his doubt whether there ever will be enough grinders installed in any one city or town to necessitate a change in the present systems. New Hampshire requires at least 3.5 cubic feet per capita storage capacity in unheated tanks to compensate for long water storage. This capacity is sufficient both to meet present needs and to permit slight overloads due to grinders.

In Ohio, F. H. Waring, chief engineer, has not become unduly alarmed as a result of the increased use of the household garbage grinders. The subject, he points out, has had its share of study. Canton has included an extra charge of $3.50 per year to the standard sewer rental charge for those residences having these units. Likewise, due consideration has been given to added capacities in the design of new and improved sewage-treatment plants.

In Oklahoma, E. C. Warkentin, Sanitary Engineer, says that grinders are only one factor, and cautions against overemphasizing them. His analysis is worth quoting. Here is a portion of it:

In Oklahoma it would easily be possible to overemphasize the factor of garbage grinders. To illustrate, we have checked the results obtained from our mobile trailer laboratory on 20 cities and towns ranging from a population of 35,000 to 2,000. We have found that the bio-chemical oxygen demand per capita per day ranges from 50% to over 200% over the quoted figure of 0.17 pound per capita per day.

It is reasonable to assume that 20% of any community would be close to the maximum number of people served by grinders in a period of the next 10 years. The maximum added load per capita due to garbage ash been estimated at 0.05 pound of BOD; 20% of this figure is 0.01 pound of added load per capita in the 10-year period. This means no more than a 6% increase to the average BOD loading. As stated above, we have found actual loadings to vary from 50% to 200% of the average figure. This indicates that we have other factors that carry far more weight than those caused by the garbage grinder.

In Oregon, Kenneth H. Spies, Associate Sanitary Engineer of the State Sanitary Authority, states that he feels that the grinders present a problem if used widely. However, he feels that it will not be practical to prohibit or outlaw the use of the grinder.

Rhode Island also agrees that it is impractical to prohibit the grinder. Walter J. Shea, Chief of the Division of Sanitary Engineering, also feels that it will be some time in the future before the grinder will be a factor in sewerage.

Not Enough Information

In South Carolina, J. H. Stephens, Director of Sanitary Engineering, states that not enough information based on practical use of the grinders is yet available for general statements. In Tennessee, R. P. Farrell, Director of Sanitary Engineering, states that the grinders have not to date presented any problems in his state.

In Texas, V. M. Ehlers states that he has voiced no objection to the grinders because he believes the potential problem will make itself felt gradually and thereby allow its correction in the normal course of events.

And in Wisconsin, L. F. Warrick, State Sanitary Engineer, has found no need for recommending banning the grinders. Nor does he anticipate any changes in the immediate future.

Local Responsibility

In Connecticut, Warren J. Scott, Director of the Bureau of Sanitary Engineering, stated that if a community is going to permit the discharge of ground garbage into sewers, the contributing population should realize fully the fact that extensive use of this practice will mean that they will have to spend money for enlarging sewage plant capacity. California also assumed a similar policy. Senior Sanitary Engineer

H. B. Foster, Jr., points out that the problem is one for the municipalities, and that it centers around the need to supply added digester capacity.

In the state of Washington, Emil C. Jensen, Chief, Division of Public Health Engineering, expresses the opinion that it is a problem for each community to study in light of local circumstances, and thereafter make a definite decision as to which way it will go. He feels that his division has a definite responsibility in the matter, in bringing to the attention of the governing bodies the size and shape of the problem.

In the Territory of Hawaii, B. J. McMorrow, Director, Division of Sanitation, also feels that each community presents a specific problem. The subject of garbage grinders, he says, is one which cannot be dealt with in general terms.

* * *

To close the summary, we would like to quote from the letter written by William H. Cary, Jr., Director of Public Health Engineering, Washington, D. C. He writes as follows:

The District of Columbia Health Department does not take quite as pessimistic a view of the potentialities of kitchen grinders as Mr. Croft and Mr. Shaw present. We realize that this increase of organic load on the sewage-treatment plant will necessitate enlargement of this facility. However, we predict that the savings realized in garbage-collection requirements will more than balance the increased expenditures needed for sewage disposal. In addition to an expected saving by this method of garbage disposal there are many additional health benefits derived from immediate, non-storage garbage disposal.

While no concerted effort has been made to encourage the use of the garbage grinders, the Health Department as well as the Sanitary Engineering Department, which embraces city refuse, sewer, and water activities, will look with favor on this method of garbage disposal.

Eureka Builds Fishing Boat Basin

A NEW municipal boat basin for 200 craft is expected to ensure the continued development of Eureka, Calif., as a major west-coast fishing port. The docks in Humboldt Bay are constructed from pontoons obtained from the War Assets Administration. According to George Winzler, Eureka city engineer, 774 ex-seabee "magic boxes" were used, and seven pontoons have been held in reserve for replacement during painting operations.

A unique feature of the installation is that it rises and sinks with the tide. A tight tieup at all times is thus assured, since no slack has to be left in the mooring lines. Although the city is primarily a lumbering community, its citizens are well aware of the importance of the local fishing industry. The Eureka boat basin was financed by a $200,000 bond issue which passed by a majority of 86%.

According to the Bureau of Marine Fisheries' figures, the official catch at Eureka increased from approximately 5,000,000 pounds in 1943 to more than 20,000,000 pounds in 1947.

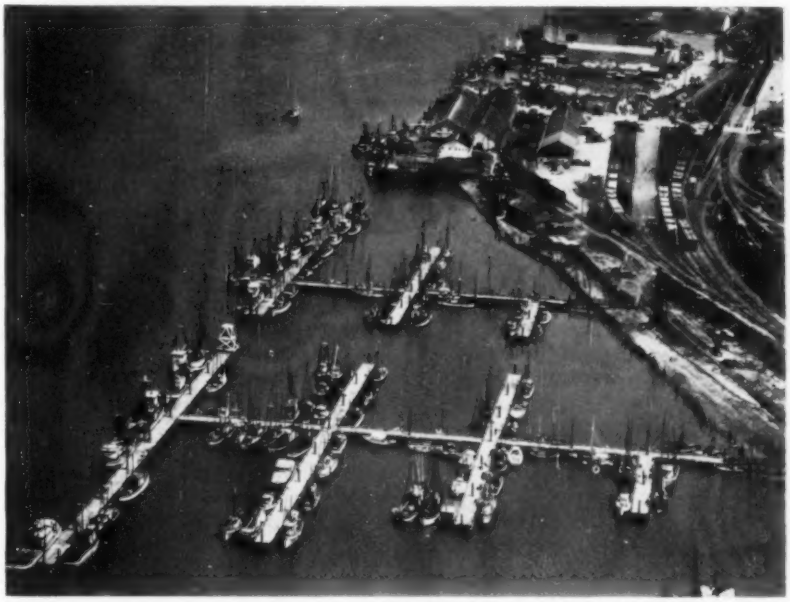


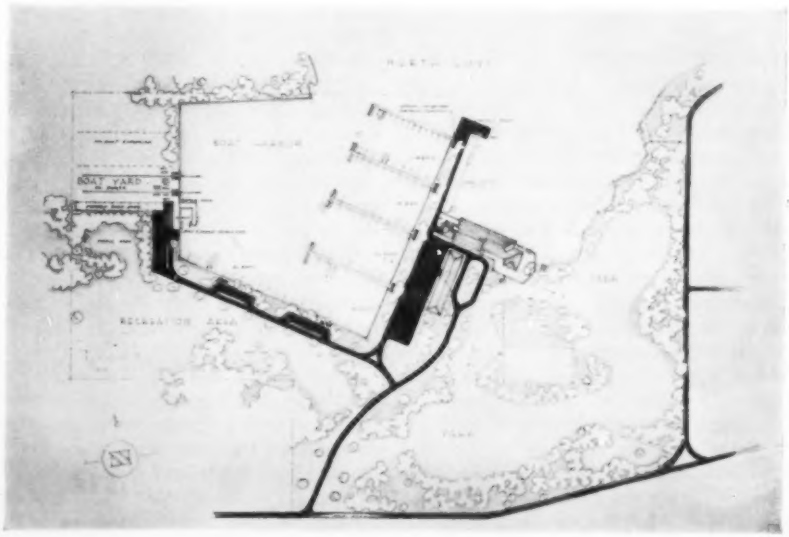
PHOTO COURTESY OF MERLE SHUSTER, EUREKA, CALIF.

The new municipal boat basin in Eureka Harbor, Humboldt County, Calif., constructed by the city at a cost of $200,000 for use of commercial fishermen.

Small Boat Harbor Plan

ON THE right is the prize-winning plot plan in competition for students in the School of the Fine Arts, Yale University, for the creation of mooring and servicing facilities for recreational boats on a site in North Cove, Saybrook, Conn.

The winning design of the 51 entries is by Jerome K. Nagel, of Denver, Colo. It is a closely integrated unit including mooring berths for 200 boats, a restaurant for 300 persons, a club house, ship's stores, a repair and storage yard, a fueling station, and landscaped recreational areas close by the water's edge, with special emphasis on the needs of children as well as adults.



The City Tells Its Story

By HENRY DAVIS NADIG, *Director of Public Relations, New York Regional Plan Association*

Research and information department provides wide range of services in Kansas City

FROM City Manager L. P. Cookingham of Kansas City, Mo., come details on the public relations functions of K.C.'s Department of Research and Information. This report shows what a thorough job of MPR is being done by that department in the media assigned to it, and is pretty good evidence of valuable contributions by MPR to city business and public understanding.

Direct contacts with the public, and preparation of material to be used with the public or with governmental or private organizations, are the two main types of MPR functions of the Department, which was established three years ago.

Mr. Cookingham notes that chief among the persons coming to the Department for information on municipal affairs are representatives of agencies both inside and outside Kansas City, college or high school students studying municipal government, and private citizens seeking information related to some specific personal problem. The information requested often is available at once from the files of the Research Department or from the Municipal Reference Library, which is a part of the Department. In some cases, however, in order to answer the questions raised, a research worker may need to spend some time in compiling data.

Information Desk

An information desk is maintained in the main lobby of City Hall under the supervision of the Department. It is estimated that two-thirds of the callers at the desk come from within Kansas City, while the remaining third are transients. Requests for information about city departments and routine matters predominate over all other types of questions. Of course, many unusual requests are also made of the employee at the information desk, who is sometimes asked to perform services ranging from caring for dogs to giving advice regarding the supervision of children in a boarding home.

The Department has frequently been called on to show visitors through City Hall and for a time one staff member had as one of his principal duties the arrangement of tours for visitors. In this connection, a movie depicting the history of Kansas City was shown to numerous civic and school groups, and information about city departments and their work was given.

The Department meets the public directly through the participation of its staff members in meetings and conferences, and through their membership on committees and boards. These include the Council of Social Agencies, the Kansas City Safety Council, the Y. W. C. A. and Y. M. C. A., various schools and clubs, and the Chamber of Commerce and its committees. Included also have been the Citizens' Bond Committee—working on a long-range program of public improvements—a committee for coordinating public and private recreational activities, and a committee under the Bureau of the Census, engaged in the study of census-tract boundaries in and near Kansas City.

Radio Series

A radio series sponsored by the Department has been broadcast to describe the work of various major city departments. This series was given throughout several of the winter months a year ago.

Organizations sponsoring civic activities or programs, such as the League of Women Voters and the Junior Chamber of Commerce, frequently ask the Department for material about the city government and its functions. To meet this demand, written material, charts, maps, posters, and sometimes small booklets or leaflets are produced.

Other city departments use this function of the Department extensively. Information is frequently gathered for members of the City Council, the City Manager, and department heads, to be used for speeches or public meetings. Data are also compiled relating to legislative matters or for use with government agencies. The Department has prepared maps and written material to show the common interests of Kansas City and certain other areas in the United States. This has been used by the Aviation Department and the Law Department in connection with airline cases in which the city intervened.

Other topics have included housing and slum clearance, industrial areas in the city, the use of fuel oil, and the annexation of territory to Kansas City.

Material prepared by the Department of Research and Information for other departments frequently includes bar charts, diagrams, or graphic presentation as well as text. Examples: an illustrated notice regarding dog licenses, an insert in color to go with tax bills, and a leaflet explaining garbage collection.

Numerous Publications

Publications by the Department are numerous and very effectively produced. A small booklet, copiously illustrated, describes City Hall and is given to visitors. Another publication, for the Community Service Division of the Welfare Department, entitled "It's Up To You," has been sent to a large number of citizens through neighborhood and community councils. A "Welcome" booklet has been sent to residents in areas annexed to Kansas City. At the request of the Health Department, a "Nurses' Bulletin" was recently prepared and distributed throughout several states in the area to prospective students for the School of Nursing at the city's General Hospital.

A series of posters regarding food-handling, for use in the city's restaurants, hospitals, and other institutions was prepared for the Sanitation Divi-

AMPRO Being Formed

Steps are being taken to establish an Association of Municipal Public Relations Officers. MPR officials whose activities have been described in previous instalments of "The City Tells Its Story" have received letters outlining the proposed aims and objectives of such a new association. Others interested in benefiting from the exchange of ideas and techniques through this group should write to Henry Davis Nadig at 205 East 42nd St. (Room 1800), New York 17, N. Y.

sion of the Health Department. They brought considerable favorable comment on their effectiveness and on the educational value of a visual approach to problems of sanitation. Another series of posters was developed for use at the "Mayor's Youth Conference"—a series of meetings held the last two years.

Annual Report Preparation

The Department, by ordinance, is assigned the responsibility of preparing the Annual Report for the city as a whole, and it also reports for individual city departments. The Department distributes both types of reports widely, the Annual Report being the most extensive undertaking. The 1946-47 Report, an outstanding job of municipal reporting in a very readable, nicely illustrated, 112-page book, had a mailing list of about 10,000.

Mr. Cookingham does not describe the handling of press relations. They are not included as functions of the Department. But a press room is provided on the 29th floor of City Hall, where the Mayor, the City Manager, and his assistants have offices, indicating the importance attached to this phase of MPR.

Inspecting a model of a freeway grade separation in the Los Angeles traveling exhibit are, left to right, California Assemblyman Walter Hinton, Mayor Fletcher Bowron, and Martin Pollard, president of the North Hollywood Chamber of Commerce.

L. A. planning exhibit

President Robert E. Alexander of the Los Angeles City Planning Commission writes that currently on tour of the city's 452 square miles is a dramatic display of models and drawings, designed to impress the Los Angeles public with the importance of proper city planning. The exhibit is being shown to inform citizens about freeway plans, parks and playgrounds, urban redevelopment, beach development, and many other projects planned for the future.

The traveling exhibit was the outgrowth of a gift made by a large Los Angeles department store to the City Planning Commission. In celebrating its 25th anniversary, the store spent several thousand dollars for models of future public improvements and afterwards presented the models to the planners.

A note on progress

There is steadily growing a realization that MPR as an official operation is a vital element in the economic and efficient management of your city today. Whatever name you give it, however you may subordinate or confine it—it's still public relations.

As far as I have been able to discover, there are no two official MPR setups alike in the United States. With probably only three or four exceptions at the most (like Charleston, S. C., for example), where MPR has been made official, it usually has been brought forth under the aegis and within the framework of an existing municipal department (as in Rochester, N. Y.)

Nor as yet do the MPR agencies always carry responsibility for all of the media and media work that seem logically to belong within the MPR operation. We are really just beginning to take MPR, as such, into official thinking—and in some cases actually into the official fold. This increasing recognition that MPR should be an official activity is a highly important step in the advancement of municipal government. It demands a new, rigorous, streamlined concept in the application of the technics of public relations.

If at this comparatively early stage of MPR development we see a variety of forms and procedures applied under a variety of concepts, certainly something is to be gained: expediency calls for immediate applications—and experience should prove valuable.

Out of these experiences, whether sporadic and uncoordinated or planned and well-integrated, we should eventually achieve a large body of agreement on the whole function of municipal public relations and its place in local government, practiced as official policy, expert operation and paying performance.

League of Muncipalities Revived in Maryland

DORMANT since 1941, the Maryland League of Municipalities was revived at a meeting of mayors and other municipal officials at the University of Maryland on September 18. The meeting, attended by some 40 persons from all parts of the state, adopted a new constitution for the League, approved a dues schedule, and elected officers.

The officers are as follows: president, Julian L. Tubman, Mayor, Cambridge; first vice-president, John C. Post, Mayor, Takoma Park; second vice-president, Thomas S. Post, Mayor, Cumberland; third vice-president, Hall R. MacLean, Mayor, Bel Air; fourth vice-president, Thomas D'Alesandro, Jr., Mayor, Baltimore; fifth vice-president, to be chosen by the Executive Committee; delegates-at-large, Henry H. Hanna, City Councilman, Salisbury, and John N. Torvestad, Mayor, Colmar Manor.

The new Executive Council selected Dr. Joseph M. Ray of the University of Maryland as executive secretary of the League, and established the permanent headquarters to be maintained at the University in conjunction with the University's Bureau of Public Administration.

The League expects to provide technical assistance and information to Maryland municipalities, to serve as a clearing house for news and information regarding Maryland local government, and to support the interests of municipalities before the Maryland General Assembly. It will affiliate with the American Municipal Association.

The new traffic-way that the State of Texas is building for this rapidly growing city shows how engineering thought is moving toward solution of the traffic problem

The Houston Expressway

The Houston expressway uses long sweeping roadway designs with a minimum of complicated intersections.

YOU get a glimpse into the future when you analyze the new expressway being built to serve the booming city of Houston. One sees the pattern to be followed that will help correct one of the city's most persistent problems—that of congested traffic. One begins to see in a clearer light some of the engineering fundamentals back of the designs used for these new expressways, and to note a bit of the philosophy of modern expressway traffic handling.

To understand it, let us look first at what faced Houston. Four national highways and one state route converge here, unloading their traffic into one of the fastest-growing cities of the South. Well before the war, streets were so crowded here that traffic congealed to a standstill during peak hours. The situation grew no better as the city's population began to push the half-million mark. Untangling it was more than a city job. It was one that called into play the Texas Highway Department as well as the Public Roads Administration. The Texas Highway Department turned the responsibility for the whole project over to W. J. Van London, and appointed him Engineer-Manager.

Now, after eight years and a cataclysmic war, one begins to see the fruits of Engineer Van London's efforts. Today, a section of roadway three miles long is open to traffic, and a one-mile stretch that he sees fit to call the "unloading platform" is now functioning by means of a huge $300,000 traffic-control signal system.

First Step in Program

These three miles, reaching out towards Galveston, are only a step in the program that will eventually radiate from Houston with three similar traffic-easing expressways, all bringing their traffic loads to the heart of the business district. This present roadway will handle 60,000 to 70,000 vehicles per day. It has three lanes of traffic in each direction, each 12 feet wide. A 4-foot median strip separates the eastbound from the west, and a 10-foot parking lane on the outer edge provides the space for cars in trouble. On each side of this express route is a 32-foot roadway supplying service to adjacent areas.

Thus, the expressway provides those two fundamental street functions, each separated into its proper niche. It provides the means of moving large volumes of traffic from one point to another by way of six-lane throughways, and it supplies access and direct service to adjacent property with service roads. These two functions, engineers agree, should never be combined on the same street.

However, the designers depart from these principles when they designed the "outlet" for the expressway. This outlet, or "loading platform," as Mr. Van London prefers to call it, resembles the mouth of a stream with its delta widening out to receive the slower-moving waters.

Near the city the expressway connects to a four-street system, with each street 52 feet wide. Two of these streets receive only westbound traffic leaving the expressway. The other two carry eastbound vehicles entering it. These streets are crossed by the standard city streets at regular intervals. Traffic studies estimate that more than 200,000 vehicles will travel north and south across these outlet arteries.

Crossings Set Up

To make them function, to arrange for a transition from the fast expressway traffic to the slower local travel, 64 signalized crossings have been set up. The signals are mounted on vertical posts. They have four face units. The bottom carries a directional arrow, and the others, the standard stop-caution-go signals. A master controller keeps all in synchronization, and can be adjusted to fit the traffic load requirements.

So much for the traffic handling. Let us now turn to the actual construction.

The expressway is laid on a poor subgrade. It consists of a clay with a high moisture content and a plastic index reaching maximums of 25. The moisture content in the clay was consistent-

ly over the optimum obtained in the Proctor test for maximum density. The water table was a short 10 feet below the surface. All of this indicated an unstable subbase and dictated the need for laying a structurally strong embankment whose strength would remain high and not be destroyed by infiltration of water.

To meet these needs, the designers decided that all embankment fill would be laid in at a density of at least 100% of the maximum produced by the Proctor test. They ordered the 4 to 12 inches of existing earth removed and the next 6 inches rolled to this 100% density figure. On this they directed that the filled material be laid to the proper grade and rolled to the 100%-density figure, and the fill has been carefully covered with asphalt laid at 1 gallon per square yard in order to preserve this optimum moisture content.

For a riding surface, the designers have used portland cement concrete with contraction or warping joints placed at 20-foot intervals. Expansion joints are placed at each 100 feet with wood used for the joint filler. All joints have suitable load-transfer devices.

Joint-Pumping Prevented

The designers recognized that one of the most damaging features of concrete pavement is the joint-pumping caused by water seeping in through the joints and softening the subgrade. In view of this, they decided to eliminate the fault. They specified a 9-inch asphaltic-concrete base on the embankment, sealed with 0.3 gallon per square yard of cutback asphalt. With this firm waterproof base, the concrete should be free from these pumping difficulties.

The concrete laid is 8 inches thick, laid with a uniform cross-section. The thickness was selected after careful structural analysis of load-bearing qualities. The concrete was placed directly on the flexible-base subgrade without the usual trimming and was purchased on a cubic-yard basis. The earth fill and pavement were designed to carry a wheel load of 14,000 pounds corresponding to an H-20 loading with a slab deflection of 0.1 inch. Designs followed the structural analysis developed by Professor W. S. Housel.

Bridge Footings

Bridge and overpass construction have created a good deal of attention in engineering circles. There are seven overpasses in the section recently completed. In building footings, the designers decided to abandon the use of piles with uncertain bearing factors. Instead they pushed supporting columns down to a suitable depth where the load-bearing quality of the earth could be relied on and use a column with a spread footing. This required boring out a 30-inch hole down to the stratum of clay of A-7 characteristics, and under-reaming it to give the required bearing area. Tests indicated that the soil would support from 4 to 5½ tons per square foot, so a 6½-foot-diameter pedestal proved to be ample. The bridge footings and columns were then cast in place without the need for forming.

The new design breaks precedent with a four-street "loading platform" for entry to and exit from the expressway.

Backfilling the bridge approaches always is another point of possible failure. In the past many engineers have expected trouble here, and have supplied holes in the pavement suitable for mudjacking operations in the construction as a matter of course. However, in the Houston expressway, all backfill behind the abutment is placed with soil cement, which consists of a low-grade, non-settling concrete using base-course material for aggregate and three bags of cement per yard of concrete.

Summary

Consequently, out of the Houston expressway design and construction we see at least four significant trends: we see, first, a new and somewhat different method of releasing the traffic load from the high-traveling expressway route onto the street itself in a moderate speed-transition area of feeder streets.

We see an effort to build embankments to heavier densities than formerly most engineers felt necessary.

We see a determined effort to make those densities permanent by insuring that additional water will not infiltrate into the fill. They accomplish this by sealing the embankment with asphalt.

We also see a large-scale departure from the traditional pile-driven bridge-footing supports and, in place of this, columns bored in place with an under-reamed spread footing. We see, finally, the enlarged use of an inexpensive low-grade concrete for fill material in bridge abutments to prevent settling.

How this will develop in the future is difficult to anticipate. But with the precedent of a large-scale project back of it, like the significant Houston Expressway, we probably will see other designers following the same pattern.

The construction of the work as well as the design was under the direct supervision of Engineer-Manager Van London, appointed by D. C. Greer, State Highway Engineer. All land and right of way for the expressway is being acquired by the City of Houston, under the direction of J. M. Nagle, Director of Public Works.

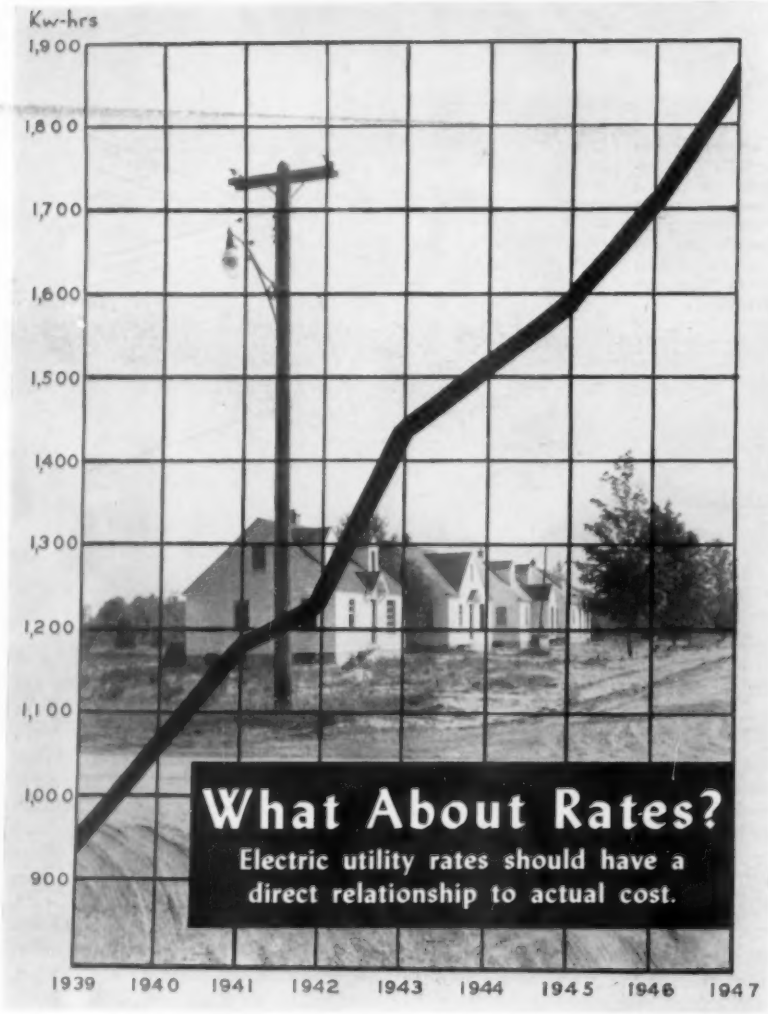
Raleigh Goes to Landfill For Refuse Disposal

BECAUSE the present incinerator has been outgrown and present city finances do not allow the construction of a larger unit, Raleigh, N. C., is turning to the sanitary landfill method of refuse disposal.

According to C. L. Barnhardt, Director of the Public Works Department, the present use of the sanitary landfill is in an experimental stage. In the future the city will probably discontinue using the incinerator if the use of the landfill progresses satisfactorily. Present open-fill dumping has proved unsanitary and unsightly, he reports.

Commemoration Through Community Services, **a handsome brochure on living memorials, is available from *The American City*, 470 Fourth Ave., New York 16, N. Y., for $1.00.**

By J. BRYAN SIMS
Superintendent
Board of Public Works
Grand Haven, Mich.



Electricity is popular in Grand Haven. This shows how its use is growing.

AFTER years of reducing the cost of electricity to the public it is difficult to adjust one's thinking to the need of reversing this trend. Indeed, it is not pleasant for the utility to contemplate this policy. The electric utility industry, whether municipally or privately owned, has held the line almost alone, against a vicious inflationary spiral during these last few years.

True, everyone knows that the price of fuel has risen drastically. The householder has had annual, if not a semi-annual and in many cases even more frequent raises in his coal bill. The utility's coal bills have risen too but by careful management this has been absorbed in most cases.

Does the Customer Realize

Few customers would be expected to realize the extent of price increases in material used to supply the utility. Wire, poles, generating equipment, of which the customer knows only generally, have been increased substantially in price. The price of poles, for example, is about double the price paid a few years ago. Why has the utility industry been able to maintain its rates before this onslaught of inflation, and absorb all the increases in production cost to which it has been subjected? Have we as utility managers and superintendents informed him of these facts? Certainly he must be vitally interested, for it is his property.

Why have we been able to hold our own, maintaining rates in spite of rising costs? In some cases we actually have not been able to. Is it because we were charging excessive rates before this inflationary trend became so acute? I doubt that anyone in the industry would agree to that.

Generally, we have been doing an increasing volume of business on a greatly decreasing net per unit sold. We have been crowding our generating and distributing equipment with more volume, and possibly in many instances without increasing our fixed costs substantially.

Our depreciation of plant may have been based on much lower pre-war cost, possibly approaching half of what it would cost to replace the equipment today. In other words, $100 per kw might have built a generating plant 10 or 15 years ago, but it will not do it now. Unless ample depreciation reserve is set up to provide for the replacement of existing equipment at higher prices and proper net is maintained to provide for increased capacity due to the natural load growth, we may find it even more difficult to finance than it has been in the past.

Greater Sales Volume

We are selling 2,000 to 3,000 kw-hrs per residential user annually, compared with 700 to 800 kw-hrs 10 years ago, thus utilizing existing facilities more fully. Much of this current usage, however, is in the lower rate brackets: 2 cents, 1½ cents, and, with water heating at 1 cent per kw-hr. The average gross, and incidentally the net return per kw-hr, becomes lower and lower as the volume increases.

Some savings in production cost may be accomplished by the installation of more efficient generating equipment in the future—many utilities have been forced to utilize older, less efficient equipment. New equipment will, however, because of construction costs, increase future fixed charges.

Profit Motive vs. Financial Soundness

There may be some exceptions, but the average municipal utility operator does not basically have the profit motive in mind, that is, the accumulation of a relatively large surplus. As a matter of fact, to build up an adequate surplus is often difficult. There is apt to be diversion of utility funds, with resultant higher production costs ultimately paid for by the electric consumer.

The electric utility is fast growing; new uses are constantly being found for this refined form of energy. The utilities have been able to absorb much increased production cost by diligence and hard work in improving efficiencies.

Can this be kept up indefinitely? I'm afraid that it cannot, although many

are holding out admirably. Are we acquainting the public with our problems? How shall we explain them to them? Will they be interested? Yes, I believe they will, although we may at times be inclined to think that the public has become so accustomed to increases in costs that they may now become calloused to such bad news.

Passing on Any Increases in Costs Equitably

How shall we equitably allocate any increased production costs which we are unable to absorb? A utility should receive from all customers total revenues equal to total costs, including operating expenses and capital charges. Some net must result in order to meet growing loads with plant expansion and the necessity of increased capital. General rate levels should be fixed to yield sufficient revenues to cover all costs and to allow for growth and expansion with efficient modern operation.

While rates as a whole must cover all costs, they must be properly diversified and allocated to make possible full development of consumption for various purposes and to encourage usage.

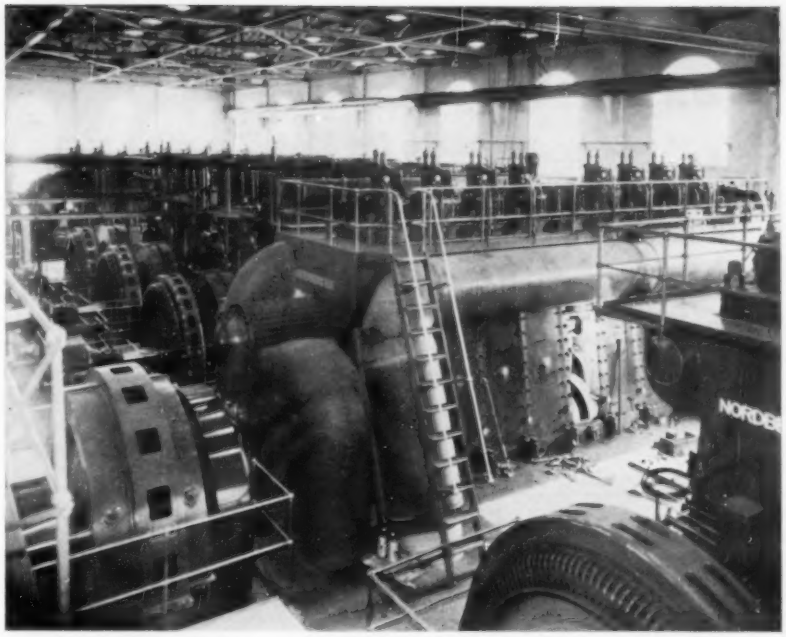
Comparison of Rates

The average municipal utility is in a competitive business. It must justify its existence by supplying definite advantages to the public that owns it. It usually does this from a competitive standpoint; other forms of energy are often available for such types of service as cooking, water heating, power. Rates of adjacent or nearby utilities often have a competitive effect whether strictly competitive or not.

Raises should be made only where absolutely necessary and then after every effort to reduce expenses has been exhausted. More particularly the diversion of electric utility funds should be discouraged.

The public should be kept informed on this subject. With the reduction in net revenue, less money will be available for diversion unless rates are raised accordingly. The public may hesitate to raise electric rates in order to accumulate funds for purposes other than the proper development of the electric property, thus effecting a blessing in disguise.

With existing rising production costs there will in the future tend to be less margin between revenues received per kw-hr and actual cost. It will require more capable management to meet this competitive situation and maintain a sound financial condition. Rates must not became excessive and yet properties must not be allowed to deteriorate. Load growth and technical progress must be met by increased expenditures; thus the revenues received must not be below cost to produce.



Increasing electricity use means more diesel engines. Two new Nordbergs, shown in the foreground, supply the needed power.

The municipal electric utility is not alone in facing these problems, if this is any comfort; however, the municipal plant has many problems peculiar to its own type of operation which we in the business fully appreciate. We will meet the challenge with the proper support and understanding of the public.

Disease Outbreaks Caused by Foods

THE number of disease outbreaks traced to foods have been nearly six times as numerous as those from water or from milk, according to a 32-page compilation recently released by the Sanitary Engineering Division of the U. S. Public Health Service. The report, compiled from data furnished by state and local health authorities, analyzes the disease outbreaks in 1946 which were conveyed through foods other than milk and milk products.

Disease outbreaks in the United States attributed to water and to milk have been declining, but those for food-borne diseases have increased. In 1946 the number of outbreaks were reduced to 32 for water and 19 for milk, but there were 299 food-borne outbreaks which incapacitated 12,526 people, 17 of whom died.

The food was usually contaminated through insanitary conditions or infections of food handlers. More important, however, early and adequate refrigeration was lacking. The eating of contaminated food at group gatherings, where refrigeration and other food-handling facilities are usually make-shift if existing at all, ranked high as a major factor in causing gastroenteritis, diarrahea, and typhoid fever.

Commenting on the 1946 compilation, Sanitary Engineer Director A. W. Fuchs, in charge of the Milk and Food Section of the Sanitary Engineering Division, said that restaurant patrons in areas containing over 60 million people are protected through local adoption of the sanitary standards for eating and drinking establishments, developed by the Public Health Service.

"The recommended ordinance, or one based thereon, is now in effect statewide in 17 states and the District of Columbia, as well as in 186 counties and 451 municipalities located in 40 states and territories, and with a population coverage of over 60,000,000. It has been adopted as state regulations in 27 states and territories. Operating under this ordinance are 41 cities of over 100,000 population and 20 cities between 50,000 and 100,000," Mr. Fuchs said.

To help states and local communities organize and conduct classes for food-establishment employees, the Public Health Service has prepared a 65-page "Guide to Safe Food Service." This manual is being used by local health depar'ments throughout the country in training programs explaining the practical measures in restaurant sanitation.

Copies of the compilation, with detailed notes on many of the 299 outbreaks, are available from the Sanitary Engineer Division, Public Health Survey, 4218 Federal Security Building South, Washington 25, D. C.

More Comment on Greenbelt Towns

Planner Cites Their Social Advantages

To the Editor of THE AMERICAN CITY:

I AM indebted to Hans Blumenfeld for bringing out in his letter on page 137 of your September issue the fact that the decentralization of concentrated urban areas can be accomplished in a variety of ways.

With respect to Mr. Blumenfeld's diagram, I might point out that radiating or other continuous ribbon or lineal patterns of urban development for metropolitan populations have one serious drawback, in that they defeat the basic purpose of dividing the metropolis into human-scale social and political units. Even if the radial arms are divided into different political units, the fact that these units are physically contiguous tends to break down their identity and dissipate their independent character.

It would be strange, indeed, if I and other city planners of my generation had failed to notice the transformation of metropolitan areas into what Mr. Blumenfeld describes as radiating or octopus patterns. Before the coming of the automobile era there were completely separate and independent towns at intervals along the steam-railroad lines that ran out from the central cities. Between them was unspoiled countryside in farm and forest or in large country estates.

The railroads furnished quick transportation to the central cities for those who needed it but most of the satellite towns had a well-developed economic life of their own, and daily trips to the center were required only of the few who preferred business or cultural connections there. Except for the fact that the central cities had already become too big and congested, the over-all pattern was a relatively healthy one.

Automobile and bus transportation gradually converted these series of satellite towns into more or less continuous urban strips, first by permitting them to grow outward from their respective railroad stations, and then by providing easy transportation from the central city to the intervening spaces. The result was a radiating pattern of urban territory following the railroad lines, but that proved to be only a transitory stage as the automobile next began filling in the interstices between the radial lines. In the process, most of the original satellite towns lost their identity and their character.

If we assume the control over land use that will be needed for any well-organized dispersal of metropolitan concentrations, then the pattern advocated by Mr. Blumenfeld could be preserved and the filling in of the spaces between radials could be prevented. Even so, I feel that the remaining lineal strips of urban territory are undesirable as a general pattern, with possible exceptions where special conditions warrant it, such as in valley formations or where there is need of servicing exceptionally large employment centers.

Actually, if the job of dispersal is done intelligently, the need for travel between urban units, and particularly for travel between outlying units and the center, will be cut to a minimum, so that the efficiency in transportation provided by Mr. Blumenfeld's scheme will have little point and perhaps not enough supporting traffic to justify it. From the security standpoint any pattern emphasizing a strong center and major lines of radial communication is more vulnerable to bombing than a grid which disperses transport and utility lines as well as the towns they serve.

The objective is not to rearrange metropolitan areas so as to ease the daily ebb and flow of traffic between centers and suburbs, but to rearrange them so that the component urban units are as fully self-sufficient as possible. The clustering of such units allows them to take part in those larger activities which depend on a greater population than exists in any single unit: for example, support of a university or other high-level cultural activity, or of unusual retail shops or central supply depots, or the mobilization of fire or police forces for major emergencies. At the same time, the units in the cluster can retain a high degree of political autonomy and enjoy the social advantages of moderate size. The units are not neighborhoods in a big city but complete and independent cities, grouped for mutual advantage.

TRACY B. AUGUR
Norris, Tenn.

See page 5 of the June issue and page 137 of the September issue for articles and diagrams involved in this interesting debate on the ideal pattern for urban growth.

Factory Dispersal And Public Works Programs

To the Editor of THE AMERICAN CITY:

I have just read with much interest the item headed "Factory Dispersal for National Security and Rational Town Planning," which appeared in your September issue.

For some time now the Federal Works Agency has been studying problems of urban development and redevelopment and the possibilities inherent in building new "greenbelt" towns around urban peripheries. Factory dispersal for national security, as recommended by the National Security Resources Board, may very well result in stimulating the planning and building of garden city communities.

I feel that the whole question of industrial dispersal is as important to state and local governments as it is to industry. It is in the local communities, and particularly involving their public-works officials, that we will have to manage the provision, including financing, of public works which will be required in any program of industrial dispersion that develops.

Our modern industrial set-up is dependent on adequate highways to facilitate the flow of raw materials to the plants and the distribution of finished goods. Sewer and water lines are necessary for industrial use; there must be supplied the whole range of public works which today we take for granted—essentials like schools, hospitals, recreation sites, and police and fire protection.

Public works enter upon a new phase rather different from their traditional aspect where new industrial facilities in completely new towns are in prospect. The NSRB report points toward urban communities of not over 50,000 population, separated from other communities by open strips of countryside.

Some of these cities of 50,000 might be entirely new, others may be developed as an expansion of an existing smaller town or as suburban cities fringing a large metropolitan center. In any event, the communities will need adequate public works.

The Federal Works Agency, which handled the construction of public works under the Lanham Act during the last war, is working closely with the National Security Resources Board in studying a number of phases of the dispersal problem. The security of industry and national productive capacity obviously concern the national community as a whole. Local, state, and federal governments may not neglect thoughtful and continuing attention to the implications of the NSRB recommendations.

THE AMERICAN CITY is to be commended for its vigorous editorial support of urban planning and development policies which conduce to the benefit of our communities, both with respect to present security and long-term peacetime objectives.

J. W. FOLLIN
Assistant Administrator
Federal Works Agency

How Rochester Won

The "Battle of the Salt"

By HAROLD S. RAND
Director of Public Relations
Rochester, N. Y.

ROCHESTER, N. Y., is looking forward to its winter snow-removal operations with confidence acquired from experience and a job well done. Behind it is a decisive victory in the famed "Battle of the Salt," which rocked Rochester with private and public controversy in the midst of the 1947-48 winter and which threatened, for a time, to become an indictment of the city's operation of its Department of Public Works. Fortunately, the open manner in which City Manager Louis B. Cartwright handled the explanation of the use of rock salt to combat ice and snow and the yeoman work of City Chemist John A. Temmerman, in proving almost beyond doubt that many of the alleged bad effects of the salt were exaggerated, turned a month of turmoil into public commendation of the city administration for a job well done.

Beginning a Standard Practice

We have used International salt mixed with cinders or gravel to combat ice and snow since 1941. After some cautious experimentation for several winters, the city began to make it standard practice to get out the salt and cinder trucks immediately following a heavy storm or sudden freeze. Major arterial streets and the downtown business section are always heavily salted, while all intersections and grades are salted too. The Rochester Transit Company, which operates the city's omnibus system, salts its bus routes.

Although there have been frequent complaints from automobile owners about the use of rock salt to combat ice, there had never been a concerted attack on the city's handling of the situation until last winter. The attack began right after the New Year. On January 2nd, one of the local papers carried a letter by a resident of a Rochester suburb alleging that the salt was ruining his car. Both of Rochester's newspapers immediately followed up the letter-to-the-editor with two- and three-column feature stories quoting every and any citizen who had a complaint, real or imaginary, and who wished to express his opinion on the use of salt.

For ten days the newspapers ran regular "salt" stories daily. Citizens expressed their views, experiences in other communities were cited, and Rochester began to settle down into a pro-salt camp and an anti-salt camp. On January 12th, after due consideration and with the full facts in hand, City Manager Cartwright issued a complete statement on the use of salt, in which he

This is a Rochester street on which no salt was used, and this is the way the street looked last winter. Traffic was slow and the driving risky.

This street has been treated with rock salt. There is no further snow-removal work involved, and there is plenty of improved traveling for the public.

explained the record of its use and listed the reasons why the use of salt would continue.

Cartwright's summing-up is worth repeating, since his forceful logic turned the tide of criticism and won the day for Rochester.

> In the final analysis (he declared), we are faced with the very positive safety results of the use of rock salt on one hand and its debatable corrosive action on the other. The choice between highway deaths and injuries and possible corrosion of motor vehicles is obvious.
>
> If we are to protect our citizens from death and injury, keep open our traffic lanes, protect motorists from costly smash-ups and protect our transportation facilities, common sense dictates the continued use of a salt mixture until a more satisfactory substitute is found.

A great deal of credit for strengthening the city's position in the salt argument goes to Rochester's able City Chemist, John A. Temmerman. While the controversy raged, Temmerman was busily at work collecting data from other cities and major automotive research agencies to bolster the case for the use of salt. National authorities stated that salt would not injure cars, if their paint jobs were intact. The age and inferior condition of many cars in use was pointed out as another factor where salt might be blamed. In every case the safety factor was given precedence over any other.

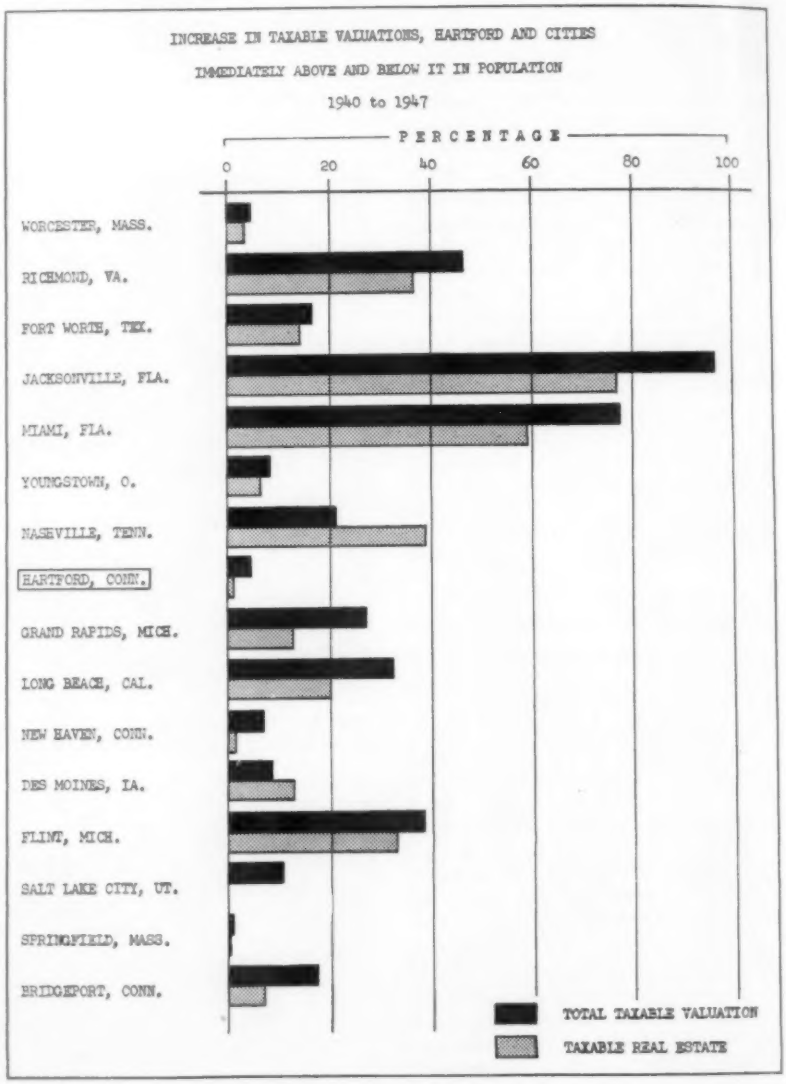
Results of the "Battle"

Some interesting facts came to light during the "Battle of the Salt." All the major automotive-fleet operators, whether they were the transit corporation, milk companies, taxicab companies, or carting companies, backed the use of salt. The safety factor and the reduced cost of equipment damaged during the winter months left no question in their minds. The city itself, which operated several hundred trucks and cars, found, upon a closer look, that not even the trucks which carried the salt for spreading were damaged. Good care and constant washings eliminated the dangers of possible corrosion.

The weatherman made the decision final in favor of Rochester. The winter of 1947-48 was exceptionally cold. Although there was not the usual heavy fall of snow, there was a great deal of sleet and ice. At no time during the winter was traffic inconvenienced by ice within the corporate limits of Rochester, thanks to the use of the rock-salt mixture. This was especially noticeable to suburban drivers who would come skidding in over the unsalted town roads and find the city's streets as bare and open as in midsummer. The usual heavy toll of smashed autos due to skidding was missing, and pedestrians were safer both in life and limb on the dry intersections. The transportation system moved on schedule, and the rush-hour crowds could be moved as expeditiously as those in Miami or Los Angeles in mid-winter.

Rochester's Commissioner of Public Works, Edward F. Nier, is busy with planning winter strategy even now. In Rochester, the battle plans against King Winter call for a constant alert, and the dispatch of the snow-fighters into action before any storm gets too far under way. Commissioner Nier, with the backing of the city manager and the community, will rely heavily upon the judicious use of the rock-salt mixture to keep traffic moving as it has in the past.

Reporting on a Municipality's Finances



DEPICTING the effect of the inflationary trend on city finances, the first in a series of reports for issuance to the Council of Hartford, Conn., on the city's basic problems has been released by Carlton F. Sharpe, City Manager. Data for the charts in the report entitled "Basic Financial Problems" were gathered by the Governmental Research Institute and checked by the city's Finance Department.

The chart above, reproduced from Mr. Sharpe's report, shows that Hartford has not increased its taxable valuations to an extent comparable with most of the cities named during the inflationary period. It should be understood, the report adds, that the increased valuations in other cities may have resulted from growth as well as revaluation. Furthermore, it is possible that these other cities had lower valuations in the year 1940 than did Hartford.

Gate Valves and Cone Valves

—How they are used in the distribution system

Cutting in a 36-inch roto valve in a 64-inch steel pipe in Los Angeles.

THE place of cone valves in the distribution system came in for transcontinental discussion at the annual American Water Works Association meeting in Atlantic City. Laurance Goit told how they are used in Los Angeles, Calif., and Laurie Leedom outlined practices in Newark. Mr. Goit is Chief Engineer of Water Works in the Los Angeles Department of Water and Power. Mr. Leedom is Construction Engineer in the Newark Division of Water. Donald M. Belcher, Chapman Valve Mfg. Co., Indian Orchard, Mass., followed their discussion with an analysis of the manufacturer's viewpoint.

Purposes and Advantages

Valves in distribution systems, said Mr. Goit, have two purposes:

To shut off the water so that a connection or extension can be made. This rarely involves working the valve against unbalanced pressures.

To make an emergency shut-off—for example, when a main is broken. This means reduced pressure in the main and requires large valves to operate with full differential across the valve.

All operators are familiar with the process of shutting a gate valve as far as possible and then going to the next valve on the line and shutting it so that the original valve can be closed. This takes much time, wastes water, and often causes undue property damage.

Cone valves eliminate this difficulty, since they can be shut off completely against a full differential in main pressure. They have the additional advantage of providing about half as much friction loss as the standard gate valve provides.

Los Angeles installed cone valves in strategic places in the distribution system during the war as a defense measure. This insured easy isolation of damaged sections of the system in case of enemy action.

In explaining Newark's use of cone valves, Mr. Leedom likened gate valves to sluice gates that are more difficult to operate as they are closed. However, they are simple when compared to cone valves. The cone valves have a mechanism that pulls out the plug slightly so that it can be turned, and then reseats the plug when the valve is shut. This mechanism increases the cost of the valve materially. To offset this, the hydraulic loss through a cone valve and reducers is very small, and consequently smaller valves can be used.

The difference in labor represents another saving. On one 6.8-mile-long line are three 48-inch gates, each requiring 450 turns of the valve stem. These require 6 to 8 man-hours each. The line has now been equipped with 24-inch cone valves, which need only 72 turns, and can be operated by one man in a few minutes.

In Newark the cone valves have been designed eccentrically, so that they form a straight line along the bottom. This lowers the valve and makes it more accessible in the vault, and also makes it possible to lower the vault ceiling.

The specifications for valve construction also have been designed especially for Newark, with special emphasis on corrosion resistance. The valve is equipped with Everdure bolts and bronze nuts to insure easy replacement at all times.

Mr. Leedom gave illustrations of how the hydraulic efficiency of the valves balanced out the increased cost. If the pressure in the system is maintained by gravity instead of pumping, small cone valves can be used with properly designed venturi reducers. In Newark he is using valves in these mains:

16-inch automatic valve in a 42-inch main
18-inch automatic valve in a 48-inch main
24- and 30-inch automatic valves in a 60-inch main.

Cone valves are safer to operate also because of the fact that a man can operate them in a vault, and does not have to be exposed to traffic on the street.

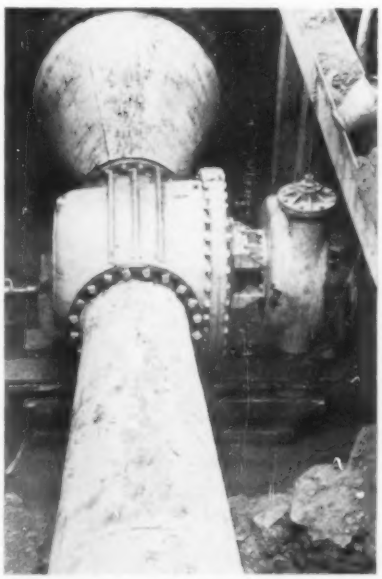
In closing his discussion, Mr. Leedom advised operators to take the time to see how much it is costing to operate the gate valves in their systems.

Gate Valves Analysis

Mr. D. M. Belcher presented the analysis of gate valves from the standpoint of the manufacturer. Many do not appreciate the magnitude of the forces required to open such a valve, he said. The weight of the parts plus the friction between the seats adds to a recognizably large force. It is absurd to expect valves to open easily under unbalanced pressure with such gear ratios as are normally used. Engineers should demand adequate operating mechanisms for manually operated valves as they do for electrically operated valves. (AWWA specifications say that the gearing should be designed for maximum facility and speed of operation with the minimum number of men.) This is obviously too indefinite.

It seems logical, he said, that not enough use has been made of ball bearings and higher gear ratios in the mechanisms being supplied. He suggested that the specifications should read:

"Valves should be equipped with manually operating devices of sufficient power to open and close a valve under unbalanced pressure of ..... pounds with a pull of not over 40 pounds on a 12-inch crank."



A 24-inch cone valve in a 60-inch feeder main in the Newark system.

Urban Progress in Latin America

By ANATOLE A. SOLOW, *Housing and City Planning Specialist, Pan-American Union*

San Jose Improves Traffic System

Training the young generation in traffic control: Boy Scout directing traffic at busy intersection in San Jose, capital of Costa Rica.

THE SMALL Republic of Costa Rica has often been called the Switzerland of Central America. A nation of many small farmers, landowners, and middle-class people, Costa Rica has maintained an outstanding democratic system of government and has taken pride in the high educational standards of its population.

There are few cities in the world which compare with San Jose, the capital of the country, for the beauty of its location, the magnificence of its surrounding landscape, and its mild climate. This city of 100,000 people is the focal point of the road system of the country. The Inter-American highway from Nicaragua to Panama will pass through San Jose. Yet, street design has not kept pace with the great increase in automobile transportation. The principal business arteries, dating back to Spanish colonial times, have only 20-foot-wide pavements and are clogged with buses, trucks, automobiles, bicycles, ox-carts, and pedestrians. Telegraph posts are located in the pavement rather than the sidewalk. San Jose has the distinction, like Dupont Circle in Washington, D. C., before its replanning, of having street cars run against traffic on one-way streets.

Recently the citizens of the community have awakened to the fact that something is wrong with their city and that the development of the capital must be planned.

One of the first jobs was the institution of a number of traffic-control measures. The results obtained in a short time, under the able direction of the new chief of traffic, show what can be achieved by efficient and imaginative work. All streets in the central business area are being converted into alternating one-way streets. The buses were re-routed in a rational manner. A completely new staff of traffic officers, trained in the brief period of two months, is second to none in the efficiency of directing traffic and of enforcing regulations politely but firmly. Public education has been used extensively. Shop windows exhibit maps and explanations of the traffic system. Boy Scouts are trained in traffic control. During a "Children's Week," traffic on all intersections was directed with amazing competence by boys from 6 to 12 years.

The Costa Ricans have, however, come to the conclusion that more than traffic control is needed to improve their capital city permanently. For the first time in the history of San Jose, a program for master planning is now being developed by the municipal and national government. Technical advice in this matter is being given by the Pan American Union.

Puerto Rico Uses Prefab Aluminum Latrines in Extensive Sanitation Program

IT may be easy to specify on paper that a flush-toilet for every family and public sewage disposal are desirable standards for environmental sanitation. However, in the rural and even suburban areas of Puerto Rico—as in many Latin American countries—living conditions of the great majority of people are so far below any accepted minimum, and economic resources are so inadequate, that new and simple solutions must be found to improve the lives of the masses.

Designed specifically for use in tropical and semi-tropical climates, this prefabricated aluminum latrine is light in weight, easy to assemble, and highly resistant to deterioration.

Considerable success has been obtained by the systematic and planned use of prefabricated aluminum latrines, developed by the Southern States Iron Roofing Company, and intelligently applied to local conditions by the Bureau of Sanitation under the direction of Mr. Romney Joseph.

The aluminum latrine was designed specially for use in tropical and semi-tropical climates. An interesting feature is the fact that the privy can be erected by any layman according to instructions supplied with the package. All parts come with distinctive markings, and a bag of cement is included for the pouring of the platform. It is packed in a manner to permit transportation on mule or horseback, and its light weight permits it to be easily carried even in difficult mountain terrain.

The latrines remain the property of the Puerto Rican Government and are loaned to the individuals, making it mandatory for them to maintain the unit in good condition. In spite of the pressures of individuals for the units, they have been carefully and thorough-

ly distributed on the basis of watersheds, starting at the headwaters and working down. This, of course, is much more effective than a wide scattering of the units in such a manner that it would have little effect on any particular community.

First, the region is studied where the privies are needed. The contamination of the soil and bodies of water is determined. If the place requires the installation of privies, a census is taken, house by house, to determine the exact number needed. The people having no privy at all are ordered to prepare the hole and base in the place where the privy is to be installed. This is done under the supervision and instruction of a sanitary inspector, who selects the appropriate spot in order to prevent the privy being placed near the watershed or source of potable water.

An educational campaign is carried on through all the program to emphasize the need of the privy. Films are used in places where a group of people can be gathered easily. Today, approximately 12,000 latrines have been erected. There is no doubt that this approach is of particular benefit to public health and rural living standards.

Five-mile-long (66-inch) water main under construction by the municipality of Havana, Cuba. The pipe will connect sources of supply to main reservoir.

Havana Starts On Reconstruction Of Water Works

ADEQUATE and safe water supply and sewage disposal are the crucial problems for many Latin American cities.

After many years of discussion and studies, the Municipal Council of Havana (metropolitan population estimated at 1,000,000) has approved an extensive project for the construction and development of its water-works and distribution system.

A $26,000,000 revenue-bond issue will finance the program with mortgage collateral. Work has already started on one of the principal water mains.

An interesting feature is the administrative set-up for carrying out the project, which has been introduced for the first time in the structure of Latin American municipalities. The program will operate under an autonomous public corporation managed by a council on which will be represented the bondholders, the municipal government as owner of the water-works, and the national society of civil engineers.

Dr. Carlos Moran, Executive Secretary of the Inter-American Commission for Municipal Cooperation and advisor to the municipality of Havana, has principally collaborated in the preparation of the administrative and financial plan.

U. S. Decentralization Plans Discussed

PROSPECTS for decentralization and the building of new towns in the United States were topics of keen interest at the National Planning Conference of the American Society of Planning Officials, held in New York October 11 to 13.

This theme echoed through a number of the addresses and discussions, including the keynote speech by Lewis Mumford on "The Goals of Planning"; a speech by Gordon Stephenson of the University of Liverpool on "Planning in Great Britain and the New Towns"; a session on "Criteria in the Selection of Cities for Industrial Location"; a debate on "Decentralization — Blessing or Tragedy?" between Tracy Augur of the Tennessee Valley Authority and Charles E. Merriam, University of Chicago; and an intensive discussion arranged by the New York Metropolitan Committee for Planning on "The New York Region—A Case Study on the Limits of Growth by Sprawl."

Mayor William O'Dwyer, in welcoming the conference members to New York, reviewed the city's problems and its extensive program of public improvements. He declared that the administration is now fully aware of the importance of planning and that the position of the planner will continue to be a high spot in succeeding administrations.

An unusual feature of the Conference was a session on Inter-American planning, at which representatives from Puerto Rico, Panama, Uruguay, Cuba, and Argentina described their respective planning programs. An exhibition on "Urban and Insular Planning in Puerto Rico" was held at the Russell Sage Foundation building.

A humorous evening program of skits, entitled "The Planners' Cul-de-Sac," produced by some of the younger members of the profession, proved very popular in lampooning some of the more stodgy aspects of current planning practice.

Re-elected as officers for another year were: president, Charles B. Bennett, Director of Planning, Los Angeles City Planning Commission; vice-president, Rafael Pico, Chairman, Puerto Rico Planning, Urbanizing and Zoning Board, and treasurer, Charles S. Ascher, Special Consultant, UNESCO. Elected as new directors of the organization were Ferdinand Kramer of the Metropolitan Housing and Planning Council of Chicago and J. Lister Holmes of the Seattle Planning Commission.

The Committees for Planning Research and Action, which also held meetings at the conference, elected John M. Ducey, Director of Planning, Chicago Housing Authority, as executive secretary, with the understanding that the Chicago Association for Planning Research and Action would act as executive committee for the various local groups and correspondents for a one-year period.

The revival of the Regional Planning Council of America was another development during the week. Dormant for years, it has now been reconstituted with a somewhat larger membership and plans for an ambitious program. The officers are as follows: president, Clarence S. Stein; first vice-president, Benton McKaye; second vice-president, Lewis Mumford; third vice-president, Catherine Bauer; secretary, Hugh R. Pomeroy, and treasurer, Albert Mayer. Roger Willcox of the New York Regional Plan Association is to act as executive secretary.

How Many Blocks?

A little insight into one of the factors that make all water rates appear to differ so greatly

HOW many blocks, or steps, should a good water rate have? One answer, given by Charles Capen, General Manager of the North Jersey Water Supply District, is that there should be more than one and less than 16. You will find examples here and there of both.

You determine the number of blocks for a water-rate schedule in much the same way that many of us did when solving our old high-school algebra problems. First we looked at the problem, then we looked in the back of the book for the answer; then we worked out a solution that met the requirements of both.

We know that there is a gross operating cost. C. L. Ahlgren, Assistant Engineer, Manchester, N. H., Water Works, states that this should cover:

(a) fixed charges; interest, taxation, depreciation, amounting to 20-25% of the gross
(b) operating and maintenance; about 50-60% of the gross
(c) new construction; amounting to 15-25% of the gross

Next we know that the rate scheduled should yield this sum. The intermediate step is to classify the users into groups, according to their use of water, and assign each a rate large enough so that together they provide the total.

In a typical small city one might classify the users into these groups:

Single-family residences
Multiple-family developments and apartment houses
Small retail stores and small manufacturers
Large retail and manufacturing establishments.

Naturally the rate system should be simple. For example, the fewer the blocks the easier it is to adapt automatic billing equipment to it. Thus you make the rate easier for the customer to understand, and simpler for the accounting department to handle.

As a rule of thumb, it has been said that the rate for the first block should be double that of the last. This, like all other rules of thumb, is useful principally as a guide. The rate differentials between blocks should take into account the fact that it is more difficult to deliver water through a network of pipes into individual homes than it is to supply an individual large user through a single supply main. It should also recognize the fact that it costs about the same to read a meter, whether it is a large compound meter or one serving a small household.

The blocks should be examined carefully. They play a highly important part in the economic life of a community. Water is a significant factor in many industries. A low cost of water means a lower cost of production and a healthy industry. A community gains if it can offer a high-grade water at low cost, but it should be careful not to make this cost so low that it amounts to a subsidy.

Corvallis, Ore.

Rates Per Month

The minimum charge for service through the various sizes of meters shall be as follows, except compound meters on private fire services, on which the minimum charge shall be for the smaller of two meters.

5/8" x 3/4"	$1.20
1 "	2.00
1¼"	2.50
1½"	3.00
2 "	4.00
3 " and larger	6.00

First	250 cu. ft.	$1.20
Next	3,750 cu. ft.	.12 per 100 cu. ft.
"	96,000 cu. ft.	.11 " " " "
All over		.10 " " " "

An additional charge of 25% will be made on all services located outside city limits of Corvallis and Philomath.

City Ordinance No. 1426 of September 18, 1944, provides that 20% additional be collected and paid to the city for deposit in the "Sewer Sinking Fund."

The minimum charge for two houses served through one meter will be $2.90 per month.

For a customer with more than one meter within the city limits, using 500,000 cu. ft. or more per month, the charges will be computed on the combined total of the meter readings.

General Data

Population served	15,000
Services	3,000
Meters	3,000
Hydrants	190
Valves	465
Miles of mains	70
Storage	75 mg
Treatment	Chlorine-ammonia
Average demand	3 mgd
Plant capacity	6 mgd

Customer Costs Per Month

3,000 gals.	(400 cu. ft.)	$1.65
5,000 "	(667 cu. ft.)	1.92
10,000 "	(1,333 cu. ft.)	2.58

J. A. GALLAGHER
Superintendent

Waco, Texas

Rates

First	2,000 gals.	75c minimum
Next	25,000 "	20c per 1,000 gals.
"	975,000 "	10c " " "
All over		8c " " "

Summer rate applied from May 15 to Sept. 15 with a 5% discount on the first dollar of the bill, a 10% discount on the second dollar, and 15% discount on all bills over $2.00.

A minimum ¾-inch service is required for all installations. For a two-story, two-apartment house, and for a three- or four-apartment house, a minimum 1-inch service is required. For a larger apartment house or a business, the size is determined by the water department and the plumbing inspectors.

Each apartment must have a separate meter, except under special conditions. There is a charge of $1 for meter turn-on.

There is a charge of $5 per fire hydrant per year, collected from the city, and a charge of 6 cents per 1,000 gallons of water used by the city for street flushing.

The department makes no payment to the city's General Fund.

General Data

Population	85,000
Population served	80,000
Number of services	17,175
Number of meters	17,175
Number of hydrants	770
Miles of mains	226

Customer Costs Per Month

3,000 gals.	(400 cu. ft.)	$ .95
5,000 "	(667 cu. ft.)	1.35
10,000 "	(1,333 cu. ft.)	2.35

HUBERT DAVIS
Water Superintendent

Medford, Ore.

Rates Per Month

Flat rate
residential only ..... $2.35 per mo.
Metered residential
inside city ..... .10 per 1,000 gals.
Minimum rate, 5/8" meter 1.75
Metered residential
outside city ..$.20 per 1,000 gals. first 45,000
.15 per 1,000 gals. all over
Min. charge .. 2.50

Commercial		Per 1,000 *Gallons* *In City*	*Out of City*
First	95,000 gals.	14 c	15c
Next	200,000 "	11½c	12c
"	200,000 "	8½c	9c
"	500,000 "	6½c	7c
"	1,000,000 "	4½c	5c
All over		3½c	4c
Minimum, 5/8" meter		$1.75	$2.50

The larger meters are proportionately higher.

Organized water districts and other municipalities: $1.00 for each individual service, which allows 5,000 gallons; 15 cents per 1,000 gallons over minimum.

The Commission also makes a charge of $1 per each per month for fire protection serving private property. There is no public fire protection charge.

General Data

Population served	22,146
Services	5,463
Meters	1,711
Hydrants	402
Miles of mains	51
Service levels	2
Storage, ground	12.2 mg
Supply	Springs
Treatment	none
Average demand	5.2 mgd
Plant capacity	11.5 mgd

Water Characteristics

$CaCO_3$	348 ppm
Fe, Mn	——
pH	6.9
Temperature	52° F.

Customer Costs (in city)

3,000 gals. (400 cu. ft)	$1.75
5,000 " (667 cu. ft.)	1.75
10,000 " (1,333 cu. ft.)	1.75

Minimum rates are high to encourage summer lawn sprinkling. The city is in a semi-arid region and prizes its beautiful lawns and gardens.

ROBERT A. DUFF, *Superintendent*
Medford Water Commission

Menasha, Wis.

Rates Per Month

	Minimum Size Meter	Charge Per Month
First 4,000 gals.		
Min. bill each size meter..	5/8"	$ 1.00
	3/4"	1.50
Next 14,000 gals. used		
25c per 1,000 gals.	1 "	2.33
" 182,000 gals.		
16c per 1,000 gals.	1¼"	3.00
" 250,000 gals.		
10c per 1,000 gals.	1½"	3.50
" 550,000 gals.		
6c per 1,000 gals.	2 "	7.00
" 5,000,000 gals.		
5c per 1,000 gals.	2½"	10.00
All over .. 4c per 1,000 gals.	3 "	12.00
	4 "	20.00
	6 "	50.00
	8 "	83.33
	12 "	120.00

General Data

Population served	12,000
Services (100% metered)	2,748
Hydrants	225
Valves	463
Miles of mains	32
Supply	River
Storage	overhead 0.5 mg
Treatment	Rapid sand filter
Average demand	3 mg
Plant capacity	6 mg

Water Characteristics

$CaCO_3$	170 ppm
Fe, Mn	——
pH	7.2
Temperature	33 - 80° F.

Customer Costs

3,000 gals. (400 cu. ft.)	$1.00
5,000 " (667 cu. ft.)	1.25
10,000 " (1,333 cu. ft.)	2.50

Hydrant rental is $80.00 per year per hydrant, payable monthly. The city is paid $9,600 per year as taxes from the water department. All water is metered and there is no free water; even the electric department pays the water department for all water used. Water used by the street department for flushing sewers, etc., is estimated by the size and the stream and the time the water is used.

P. WIDSTEEN
Superintendent Water and Light

Dallas, Texas

Rates

(The following are for both water and sewer service, billed monthly)

Minimum Charge

For 5/8" meter	$ 1.00 net
" 3/4" "	1.50 "
" 1 " "	2.25 "
" 1½" "	4.50 "
" 2 " "	7.50 "
" 3 " "	15.00 "
" 4 " "	22.50 "
" 6 " "	37.50 "
" 8 " "	56.25 "
" 10 " "	75.00 "

Each user shall be entitled to the use of water at the regular published schedule to absorb the minimum charge, and he shall pay for the excess at the regular schedule applicable for such service.

The following schedule of rates is charged to all users within the city limits using both the water and sewerage service:

First	2,000 gals.	$1.00 net (min. bill)
Next	3,000 "	.33 per 1,000 gals.
"	5,000 "	.32 " " "
"	40,000 "	.28 " " "
"	50,000 "	.26 " " "
"	400,000 "	.23 " " "
"	500,000 "	.20 " " "
"	1,000,000 "	.17 " " "
"	1,000,000 "	.13 " " "
Over	1,000,000 "	.12 " " "

Those users not served by the city sewer system, the rates are reduced 25%. Minimums remain unchanged.

General data

Population served	450,000
Services (100% metered)	92,700
Hydrants	5,166
Miles of mains	1,030
Service levels	3
Storage, raw	5,500 mg
Storage, ground	treated 40.6 mg
Storage, overhead	treated 6.6 mg
Supply	River
Treatment	Rapid sand filter
Average demand	48 mg
Peak	94 mg
Plant capacity	100 mg

Water Characteristics

$CaCO_3$	75 ppm
Fe	0.07 ppm
pH	10.4 ppm
Temperature	41 - 86° F.

Customer Costs

		No Sewer Water Only
3,000 gals. (400 cu. ft.)	$1.33	$1.04
5,000 " (667 cu. ft.)	1.99	1.62
10,000 " (1,333 cu. ft.)	3.59	3.02

These rates represent a raise of 20% over those in effect in 1946.

The Water Department pays for installation and maintenance of all fire hydrants. The cost last year amounted to $70,000. No hydrant rental is charged the General Fund, and the department pays the General Fund $85,000 per year as pro-rated administration expense.

K. F. HOEFLE
Superintendent

Ashland, Wis.

Rates (Service Charges Per Month)

½" or 5/8" meter	$ 1.00
3/4" meter	1.50
1 " "	2.50
1½" "	3.50
2 " "	6.00
3 " "	10.00
4 " "	18.00
6 " "	30.00

Rates, Charge Per Month

First 500 cu. ft.	20c per 100 cu. ft.
Next 9,500 " "	16c " " " "
" 90,000 " "	12c " " " "
" 200,000 " "	10c " " " "
" 300,000 " "	8c " " " "
" 600,000 " "	5c " " " "

Public Fire-Protection Services

The City of Ashland shall be charged $30,000 per annum to cover the use of equipment, mains, and hydrants up to and including the terminal hydrant and connection on each line of main existing on January 1, 1938.

For main extensions subsequent to January 1, 1938, a charge of 10 cents per lineal foot of pipe shall be assessed per annum on the basis of length of main put into use between hydrants placed, plus a fixed charge of $9 per hydrant added to the system.

Private Fire Service

Outside hydrants similar to those used for the Public Service to be charged for at the rate provided for extensions and additions to the public service and such charges added to the municipal hydrant rentals.

Private Fire Service, Metered Services:

To automatic sprinkler systems or standpipes inside of buildings, the cost of the meter, its installation and maintenance to be paid for by the consumer and meter subject to inspection and approval of the water utility.

Service Charges

2" connection per annum	$ 9.60
3" " " "	12.00
4" " " "	18.00
6" " " "	24.00

Output Charges

For all water except that actually used in fire fighting the same rate as for commercial metered service.

The Department also maintains a set of flat rates for unmetered services.

General Data

Population served	11,000
Services	2,623
Meters	1,631
Hydrants	280
Miles of mains	36
Supply	River
Treatment	Slow sand filter
Average demand	1.75 mgd
Plant capacity	7.0 mgd

Water Characteristics

$CaCO_3$	44 ppm
Fe, Mn	——
pH	7.0

Customer Costs

3,000 gals. (400 cu. ft)	$1.80
5,000 " (667 cu. ft.)	2.27
10,000 " (1,333 cu. ft.)	3.33

The department makes no contribution to the city's general fund.

JAMES SNOW
Manager, Ashland Municipal Utilities

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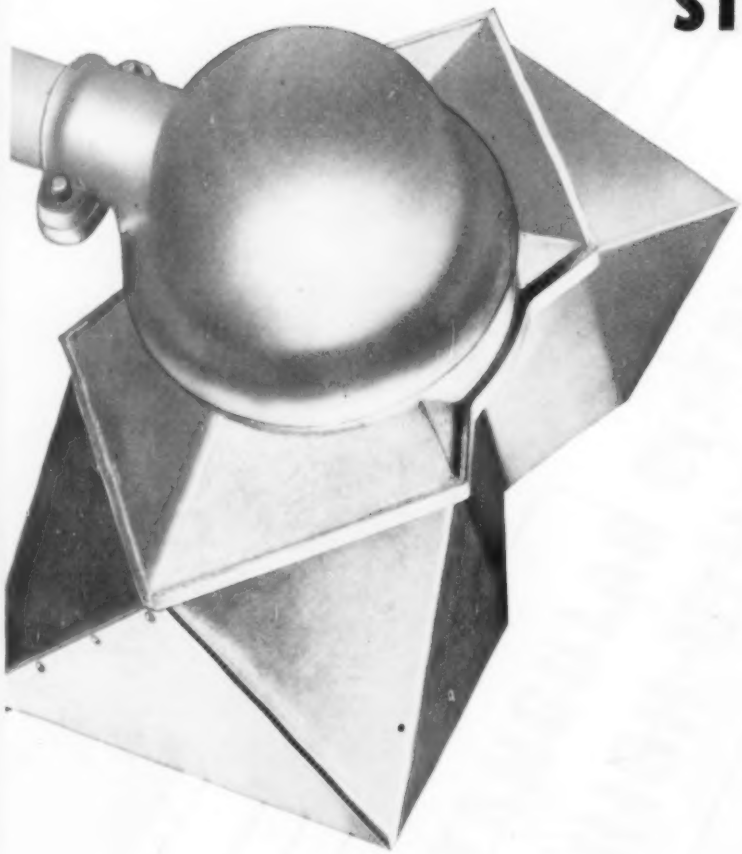
PERMALUX

a new

Suburban Luminaire in

STAINLESS STEEL



RECTANGULAR DISTRIBUTION directs light along the street and sidewalks — giving high utilization of the source lumens.

STAINLESS-STEEL REFLECTOR with hard, highly polished specular surface provides high, permanent reflectivity — no thin film to errode or wear away.

VARIABLE CUTOFF ANGLE from 45° on the house side to 83° up and down the street provides maximum utilization with minimum glare.

ATTRACTIVE APPEARANCE — unique modern design combines high efficiency with low cost.

REFLECTOR ATTACHMENTS AVAILABLE to fit most porcelain and metal heads.

Modernize your old fashioned inefficient luminaires with the Joslyn Permalux Reflector.

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JOSLYN

Complete Pole Line Equipment

39 NORTH WACKER DRIVE, CHICAGO 6, ILL.

G. AND
PPLY CO

Outdoor Lighting

Practical Christmas Lighting

By HARRY K. TREND
and
PAUL H. HILDEBRAND *

THE American people will endure dimmed-out show windows, blacked-out signs and curtailed elevator and train service. But Christmas without the usual gay outdoor lighting displays is a major sacrifice.

The cities of Allentown and Bethlehem, located in Eastern Pennsylvania, utilize the festive and religious themes in a very effective combination, Bethlehem using the star as a predominant figure, and Allentown the Christmas tree.

Allentown Display

In both communities the basic plan calls for one or two feature displays advantageously located and surrounded by lesser displays covering several blocks or miles. Allentown, like many other cities, has a center square—a wide intersection of two main thoroughfares at or near the geographical center of the city. A large stone monument, rising to a height of 300 feet, is located in the center of the square. This monument is used as a foundation for the city's main display.

On each of four sides of the monument, at the mid-point, four stars are mounted. These stars, measuring about 36 inches in diameter, are constructed of wood and hold 10-watt lamps on about a 6-inch spacing. Garlands of 10-watt yellow and 25-watt red and green lamps on 12-inch centers are draped from the stars in even loops to adjacent buildings.

Each span or drape is one color—the yellow lamps in the upper, green in the center, and red in the lower.

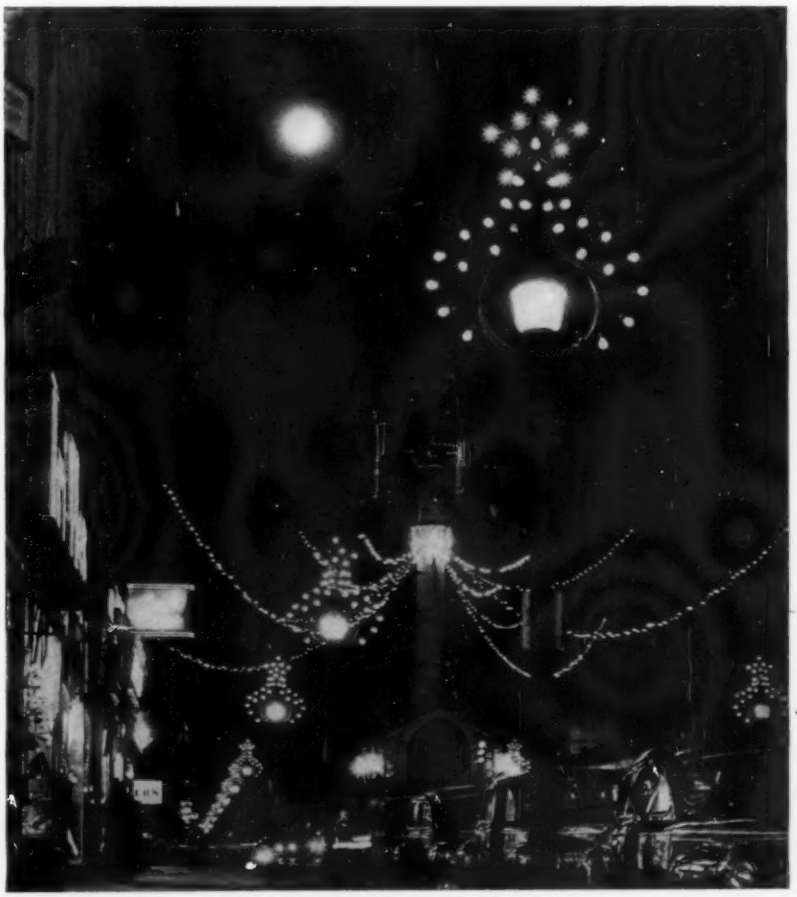
The wires are concealed with roping made up of mountain laurel leaves or other evergreens. Naturally, the current-carrying copper wires would not be strong enough to carry this weight, especially when it is added to by rain or snow. The drapes are, therefore, reinforced with ½-inch hemp rope. The use of this rope has been found practical, as it is easy to handle and store and does not kink as some wires would do.

At the base of the monument there are four 16-foot boulevard-type street lights. The globes are removed from these standards, and plastic-covered wire screening in the form of candle flames is placed over the lamps. This arrangement, with some added decorations, forms large and effective "candles."

Bridge Display

The City of Bethlehem cannot boast a center square and therefore does not have one spot in which to concentrate its lighting effort. It does, however, have a large viaduct crossing a river, a canal, and three railroads. This viaduct, known as the Hill-to-Hill Bridge, serves to connect the two main business sections of the city. Lighting effects are concentrated here during the Christmas season.

Standard street lighting is supplied year round on the bridge by means of 6,000-lumen series lamps in upright white globes mounted by means of conventional ornamental brackets on concrete posts or pylons. During the Christmas season streamers of 25-watt inside-coated red and green lamps on 4-foot centers are run from pylon to pylon. Each streamer is of one color only. A neutral wire in the form of a $^3/_8$-inch galvanized steel stranded cable runs the entire length of the bridge on both sides and serves also as a support for a 30-inch cold-cathode white fluorescent star mounted in the center of each pylon-to-pylon span. The streamers



Christmas lighting in Allentown, Pa.

* Mr. Trend is secretary of the Bethlehem Chamber of Commerce. Mr. Hildebrand is lighting director of the Pennsylvania Power & Light Company in Allentown. From a paper published in *Illuminating Engineering* of the Illuminating Engineering Society, New York, N. Y.

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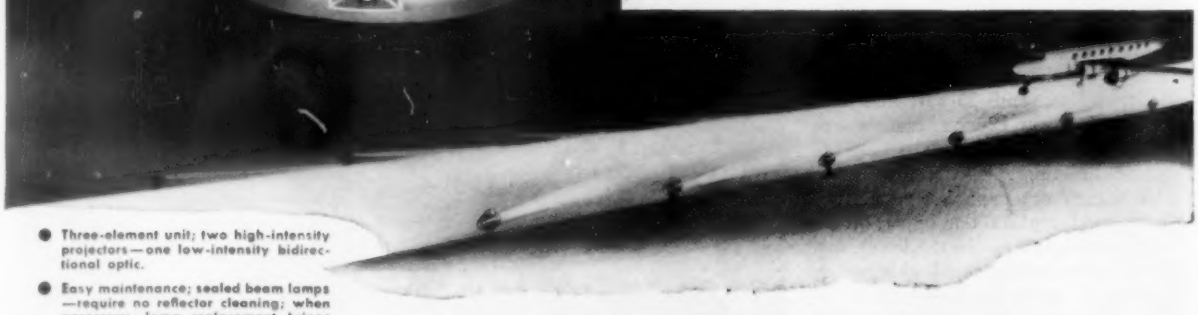
TYPE HL
HIGH INTENSITY
RUNWAY LIGHT

The right light intensity to fit any weather condition . . . that's the superlative feature of the Type HL High-Intensity Runway Light. Simply by a flip of a switch the control tower operator can select eight different steps of candle power . . . from 230 footcandles up to a mighty light blast of 100,000 footcandles. Top performance—peak efficiency in the best or the worst weather, day or night.

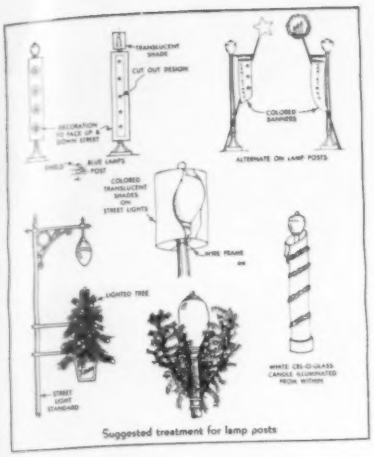
Westinghouse equipment blankets every airport lighting need. Call your local Westinghouse Distributor for information about airport lighting. *A Westinghouse Sales Engineer will gladly co-operate with you and your local utility in the development of a plan.* J-04204



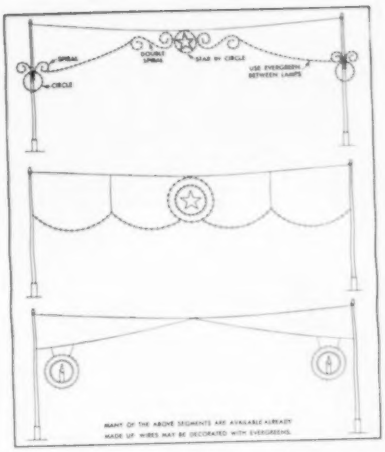
- Three-element unit; two high-intensity projectors—one low-intensity bidirectional optic.
- Easy maintenance; sealed beam lamps—require no reflector cleaning; when necessary, lamp replacement brings unit up to original efficiency.
- Positive alignment; hollow pin "gun sight" provides easy method for alignment.
- Plug-in connection for quick and easy installation.

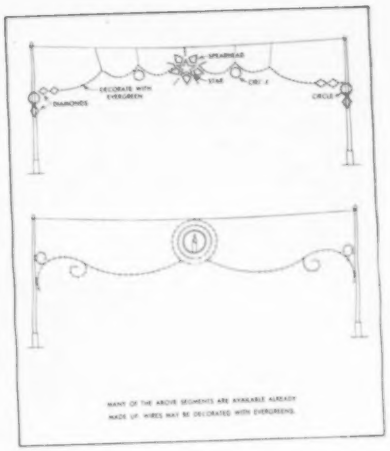
Safe, sure landings in clear or inclement weather

Write for free booklet on the Westinghouse High-Intensity Runway Light



Suggested treatment for lamp posts


SPRAY
DOUBLE SPRAY
STAR BY CIRCLE
USE EVERGREEN BETWEEN LAMPS
CIRCLE
MANY OF THE ABOVE SEGMENTS ARE AVAILABLE ALREADY MADE UP. WIRES MAY BE DECORATED WITH EVERGREENS.



between spans are draped up to the star between each pylon.

A native spruce tree, 14 feet high, is mounted on each pylon and lighted with twenty-five 10-watt lamps 18 inches on centers. The sockets are of the pin type, intermediate base, on #16 stranded wire. These wires terminate in a swivel, screw-in plug which is connected to a socket installed in one of the feeder circuits. This type of plug was selected in favor of the cap-type plug since it reduced the danger of an open circuit if the attachment cap fell or pulled out.

During the Christmas season the white glass canopies (or tops) of the street-lighting standards on the bridge are replaced with canopies of green glass, materially reducing the amount of light distributed upward. The light emitted is, of course, green. The colors of the 10-watt lamps on the trees are accentuated by contrast with it and the result is most effective.

At the junction of two of the ramps, with the main portion of the bridge in the center of the roadway, there is a concrete pylon which normally serves to hold four street lights and to guide traffic. During the holiday season, the street lights are removed, and, with the concrete post as a main support, a 40-foot Christmas tree is erected. This large tree is in reality made up of 40 to 60 native spruce trees, each 14 to 16 feet high, arranged to look like one large tree. It is lighted with 1,200 red, green, and clear 10-watt lamps on 18-inch centers and constitutes one of the three main features of Bethlehem's Christmas lighting.

Special Features

The other two features are plainly visible from the Hill-to-Hill Bridge. One of them is the floodlighting of the old belfry of the Central Moravian Church. This belfry, built over 100 years ago, is a landmark of the city. The gold weathervane on top is lighted by two 500- and one 1,000-watt narrow-beam projector located on poles nearby. The main body and columns of the structure are lighted with sixteen 150-watt reflector spot lights and four 300-watt conventional floodlights. Half of the 150-watt units are equipped with amber glass screens and so arranged that the inner sides of the columns on the belfry are illuminated in color.

The third and outstanding feature display is the Star of Bethlehem. Located on the top of South Mountain, at an elevation of over 1,000 feet (600 feet above the city), it is plainly visible for miles around.

The lesser displays used by these two communities in the business streets of the cities are vastly different. Whiteway lighting is furnished in Allentown by steel boulevard standards spaced opposite each other on both sides of the main business-district streets. These standards are unique in that they are equipped with "flower bowls"—basins of iron mounted on each standard about three-fourths of its height above the ground. In the summer flowers are planted in these bowls and the effect is striking. Just before the Christmas season, these plants are removed and branches of evergreens are placed in the bowls.

At each Yuletide, an outline form of a Christmas tree is clamped around the capital of each boulevard standard. This form is made up of steel about one inch wide and $\frac{1}{8}$ of an inch thick. The entire form is painted black. Medium-base pin-type receptacles on #14 stranded wire are fastened to the form by means of ordinary friction tape so that the perpendicular axis of each socket is at right angles to the iron form. In this manner the lamps are in a firm, fixed position. Although it is possible for moisture to enter the socket with the lamps arranged in this manner, no great trouble has been experienced, probably because the heat of the lamp evaporates any such moisture before corrosion takes place.

An amber-colored plastic screening is placed over the 6,000-lumen street light in each standard. This gives a pleasing effect with its warm tone and tends to reduce the competitive bright-

Lighting on Bethlehem's bridge.

CROUSE-HINDS

can help you plan beautiful and useful lighting that will ATTRACT MORE PEOPLE!

Swimming pool lighted with Type SPS Underwater Floodlights and Type GCP Lantern Floodlights.

Stone stairway lighted with Type FS Lighting Fixture.

Home of the Bostom Braves . . . . lighted by Crouse-Hinds Type MUA Alumalux Floodlight

Football field lighted with Type MUA Alumalux Floodlight.

Decorative Lighting. There are many opportunities to make parks more attractive by using Crouse-Hinds floodlights to project either white or colored light on fountains, gardens, statuary, towers or other architectural details. Fluorescent paint and "black-light" can be used for the selective lighting of any desired objects causing them to glow as if they were lighted from within.

Utility can be combined with decoration by using Crouse-Hinds Type VCD Roadway Lighting Fixture, Type GCP Lantern Floodlight or Type FS Floor Lighting Fixture.

Swimming Pools. Crouse-Hinds Type RPS is an up-to-the-minute underwater floodlight that combines the installation and space economy of a wet niche unit with the dry niche advantages of easy access to the lamp, lamp socket, and wire. Type SPS Underwater Floodlight is for use where passageways or manholes are available. For the overhead lighting of outdoor swimming pools: Type GCP Ornamental Lantern Floodlight, Type MUA Alumalux Floodlight, and Type ADE Heavy Duty Floodlight.

Sports Lighting. The Crouse-Hinds Company can furnish layouts for the efficient floodlighting of all types of playing fields, including football, baseball and softball fields, playgrounds and tennis courts. Crouse-Hinds Type MUA Alumalux Floodlight is widely used for sports lighting.

General Floodlighting. Concessions, rides and auto parking lots are most efficiently lighted by the use of floodlights. There are many other areas in every park where it will cost much less to project light to a considerable distance with Crouse-Hinds long range floodlights than to run wires and install local lighting.

Type VCD Roadway Lighting Fixture for viaducts, bridges or tunnels. Mounted low, it gives no glare to pedestrians or motorists.

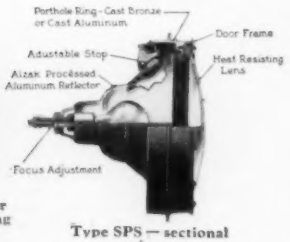
Type ADE Heavy Duty Floodlight gives perfect light control and low maintenance cost.

Type MUA Alumalux Floodlight provides adequate light at minimum first cost.

Type FS for lighting steps, floors, walks, and gardens.

Type MDB Light Duty Floodlight with removeable steel stake for temporary ground mounting.

Type RPS Underwater Floodlight for mounting in the side wall of swimming pools.



Type SPS — sectional view.

Type GCP, an ornamental lantern by day; a powerful floodlight at night.

Write for additional information to

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ness in favor of the lighted decorations.

Each steel form terminates in another star-shaped form at the apex. Ten-watt lamps are used in the stars. They are fed through flasher buttons which produce a twinkling effect. The "trees" are lighted with 10-watt inside-coated lamps in yellow, red, green, amber, orange, and pink. The lighter colors, such as yellow and pink, are used at intersections and the darker colors at the middle of the blocks.

Bethlehem Display

In Bethlehem two entirely different types of street displays are used. In the main business districts what is known as a Number One Display is used, while in the secondary business districts a small, simpler display known as a Number Two is used. The Number One Display consists essentially of streamers of 25-watt, red and green lamps on 18- and 24-inch centers, two 30-inch circles and one 60-inch star made up of intermediate sockets fastened on sturdy wire frames. Red or green 10-watt lamps are used in the circles, and clear lamps of the same size are used in the stars. Both stars and circles are double-faced, so that lamps are visible from both sides.

To avoid the competition of street lights and brightly lighted show windows and signs, these displays are suspended approximately 28 feet above the ground by means of a 3/16-inch galvanized stranded guy wire and a #6 copper wire, securely fastened to heavy expansion eye-bolts permanently anchored in adjacent buildings. The #6 wire is used principally in installing and removing the display, although it does carry some of the weight of the equipment. Since the terrain of Bethlehem is somewhat uneven, these festoons, spaced about 100 feet apart, up and down the hills, create the effect of a canopy of light.

The Number Two Displays consist merely of three streamers of 10-watt lamps, either red or green, and a 30-inch cold-cathode fluorescent star or bell. The streamers and fluorescent pieces are securely mounted on a piece of 3/8-inch galvanized iron pipe 16 feet long. The pipe is in turn suspended by wires from the available span wires supporting the overhead wire of the trolley system. This arrangement permits simple installation and removal.

Summary

The experiences of these two communities with community Christmas lighting have led us to propose a set of rules which lighting engineers, confronted with similar problems, might want to consider:

1. Be original—but practical.
2. The colors used are a matter of choice, but do not use more than one color in a drape, loop, or fixed display. Blue lamps are not very satisfactory because they are not very bright.
3. Clear lamps provide sparkle and are desirable in limited quantities.
4. The use of laurel roping or other evergreens on drapes is desirable, but make allowances for extra weight.
5. Although the C-9½ lamp is brighter and cheaper, the S-11, with a longer life and more rugged construction, will prove more economical over a period of years.
6. Place displays so that they are not in competition with other bright sources. If street lights interfere, screen them with glass or plastics.
7. Cold-cathode fluorescent tubing is a practical light source for Christmas lighting if properly constructed and carefully handled.
8. Check feeder sizes to keep voltage-drop low and thereby maintain lamp brightness.
9. Make your plans early—a year before is not too soon.
10. Take time to make your installations strong—sturdy and neat.

Any community having the full cooperation of its municipal government, its merchants, and its citizens, can have attractive outdoor Christmas lighting.

Park Avenue's New Lighting Hailed

REPLACEMENT of the single-arm lamp-posts by twin-arm lamp-posts, together with installation of the new single-arm units in the central-mall spaces in each block, will bring lighting improvement to Park Avenue, in New York, calculated by engineers to increase the illumination by 175%. The present 150 lamps, from 46th to 96th Streets, will be replaced by 400 lamps in Westinghouse luminaires.

In commenting upon this improvement, Stephen J. Carney, Commissioner

(*Continued on Page* 159)

D. L. Elliman, chairman of the Park Avenue Committee, unveils one of the new lamp-posts in a ceremony watched by Commissioner S. J. Carney of the Department of Water Supply, Gas and Electricity; Capt. W. J. Pedrick, executive vice-president of the Fifth Avenue Association; N. J. Kelly, Municipal Chief Engineer, and C. H. Morton of the New York Central Railroad.

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10 GROWING, GLOWING YEARS

In a decade of leading the field in reflective marking materials, Prismo application has spread from roadside aids and centerlines to include extensive use on motor transportation, railroads and airports.

Now on roads, on trains and on airfields all over the world, Prismo shows the way to greater safety!

The glowing success of Prismo has a brilliant future in the hands of modern engineers. Keep *your* eye on Prismo . . . "The Sphere of Safety."

PRISMO SAFETY CORPORATION
HUNTINGDON, PENNA.

Signals for Walkers And Signals for Drivers

Discussions of the article, "Coordinate Street Lights and Traffic Signals," in THE AMERICAN CITY for August, 1948

To the Editor of THE AMERICAN CITY:

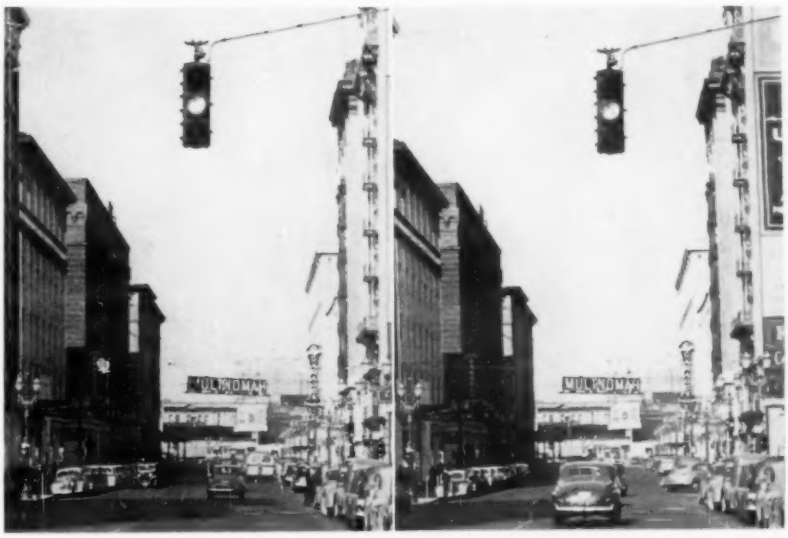
In looking over your August 1948 issue, I find a very excellent article entitled "Coordinate Street Lights and Traffic Signals." Too often street-lighting engineers insist upon keeping all the street lights in a straight line and equally spaced, regardless of the location of the units with respect to the intersection. In such cases we are apt to find a street-lighting pole in front of the proper location for a traffic-signal pole, or 5 or 10 feet too far away.

Again, the traffic engineer should work closely with the street-lighting engineer and if any streets are to be torn up for conduit for street lights, the conduit for the traffic cable should be put in at the same time.

The article expresses a strong preference for the Type C intersection, having two-way signal indications on each corner, and with this I heartily agree. I have advocated this type of signal and location for many years.

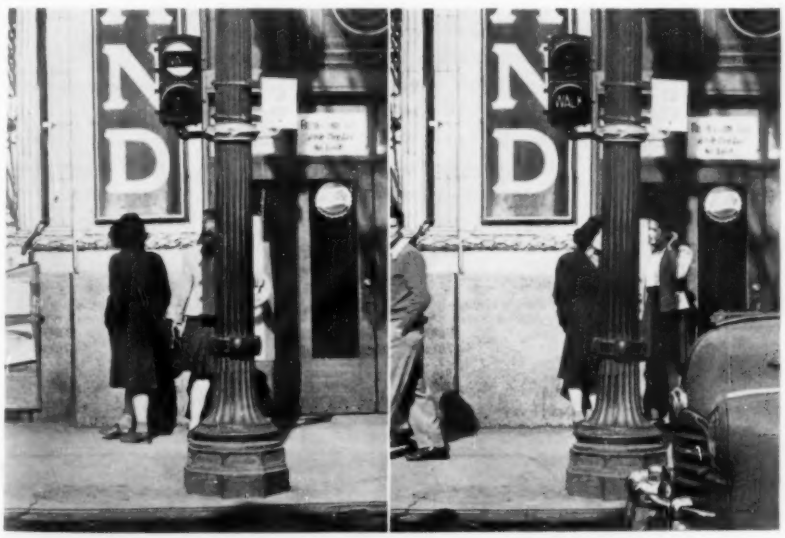
The recommended future improvement for signals showing four two-way 90-degree heads, plus two four-way mast-arm signals, is being tried out now in Detroit on Grand River, I believe, and works very well. The only objection I can see to it is that there are 16 heads per corner, which means a load of 8 amperes.

K. W MACKALL
Manager, Traffic Signal Department
Crouse-Hinds Company
Syracuse, N. Y.



PHOTOS COURTESY OF F. T. FOWLER

Without louvres. With louvres.
Viewed from a Portland, Ore., street, amber light on.



Without louvres. With louvres.
Viewed from sidewalk corner, amber light on.

To the Editor of THE AMERICAN CITY:

The article on coordinating traffic-signal installations with that of street lighting was reviewed with interest. Apparently the City of Peoria is contemplating a renovation of its traffic-signal system at the same time a modernization of street lights is programmed. That combination of circumstances might be considered unusual if not rare.

The fundamental point brought out in the article by J. A. Carrothers is the need for differentiating between vehicular and pedestrian signal indications. While there is evidence of a trend toward that objective, the obstacle of expense is a strong deterrent. The so-called "Fowler" method, developed by Fred Fowler, Traffic Engineer of Portland, Ore., simply provided louvres in the existing overhead signal blotting the indication out to pedestrians, who then had only corner-post "walk" and "wait" indications to observe. However, it must be borne in mind that vehicular indications must be furnished "in duplicate," i.e., two signal indications facing each approaching motorist. With mast-arm signals that re-

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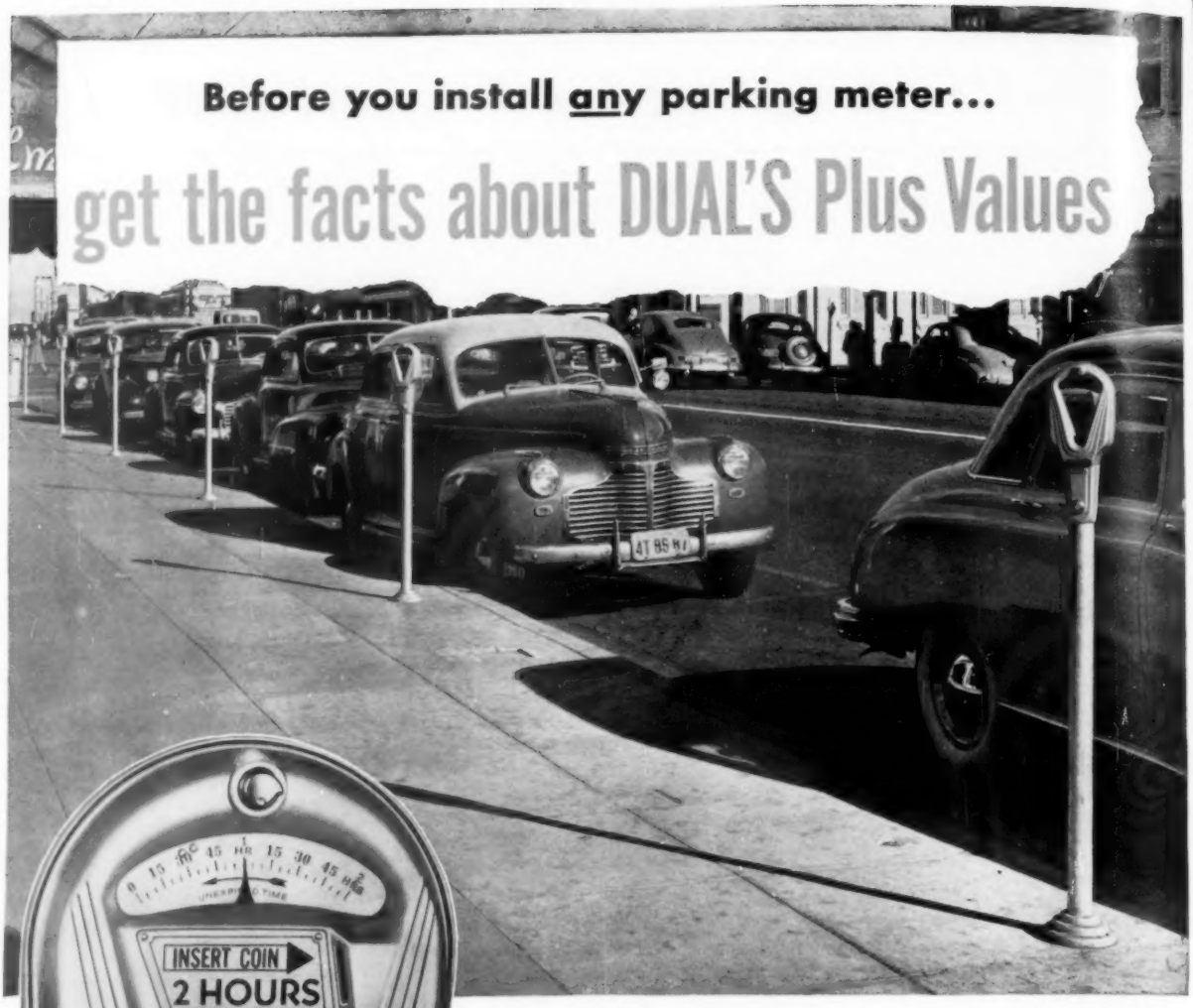
get the facts about DUAL'S Plus Values



YOUR city's investment in parking meters is important to your community in many ways. That's why it's wise to find out—before you install *any* meter—the plus values you gain with Dual Automatic Parking Meters.

For example, choice-of-coin Duals provide for accumulative time and operate automatically. The mechanism is a completely packaged unit, engineered to operate with a minimum of maintenance. Duals are *weather-proof* and *tamper-proof*—further protection against non-productive "time out".

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Rugged, long-lasting Duals are a good investment in traffic control for *your* city. Get all the facts. Write today for free bulletin. Ask our engineers for helpful survey service.

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quirement presents a problem. In the case of the sketch of Peoria's recommended future improvement of signals, mast-arm indications on one street are not in a readily discernible position.

The urgent need for a longer clearance interval for pedestrians than for vehicles is elemental. It can be secured of course with modern control, sufficient cable capacity and the use of "walk" lenses. The inclination of pedestrians to use their own indications to the exclusion of the other colors is largely a matter of education and enforcement.

Obviously, if a street-lighting standard is in proper position and adaptable to the additional support of a traffic signal it should so be used, provided the danger of possible high voltage to traffic signals is eliminated. Corner-post obstructions are too many now.

W. C. BRANDES
Traffic Engineer
Dallas, Texas

WAIT light on. **WALK light on.**

Pedestrian signal viewed from opposite corner.

To the Editor of THE AMERICAN CITY:

The proposals in Mr. Carrother's report on Peoria, discussed in the August issue, in general conform to the policies prevailing in Los Angeles at present. We, however, do not believe that 300 feet is a satisfactory minimum for advanced visibility at any location and that with the California-practiced prima facie speed limit of 55 miles per hour, the advance visibility should be considerably longer. While this city has at present no "walk, wait" signals, it is planned to make an experimental installation to determine whether the advantages thereby gained would justify the extra costs involved.

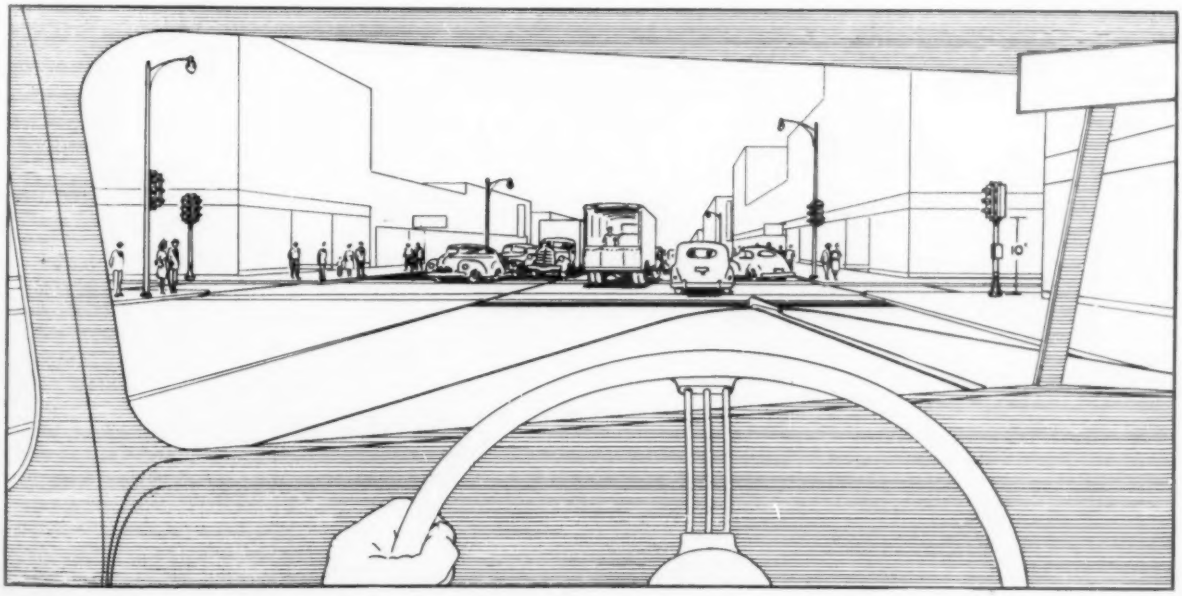
R. T. DORSEY
Traffic Engineer
Los Angeles, Calif.

To the Editor of THE AMERICAN CITY:

I will say I read with considerable interest the article in your August issue concerning the installation of traffic signals in Peoria, Ill. I noted in particular the close conformity to the plan which has been adopted for the City of Portland and the State of Oregon for all future traffic-signal installations. In 1946 I prepared a report showing the method of traffic-signal installation being installed in the City of Portland, Ore., and setting forth the desirability of separating the controls for vehicles and pedestrians so that a more reasonable type of control could be effected. I am sending you photographs showing a typical installation in the City of Portland. Since 1946 we have continued this installation, and at present we have 98 intersections thus covered.

The results obtained, particularly in regard to pedestrian observance at signals, have been really remarkable. A recent survey conducted at a number of intersections indicates better than 95% observance of pedestrian signals. Of course it should be understood that the State of Oregon has a law compelling the observance of traffic signals by pedestrians and our law covers the installation of "walk-wait" signals, so that we are backed by law in our method of signal installation. In connection with the signal installation we have made use of a special type of louvre in the vehicle signals, which is designed to cut off the visibility of the overhead vehicular signal from the pedestrians at the intersections. It is my belief that this method of installation has been instrumental in obtaining a better pedestrian observance.

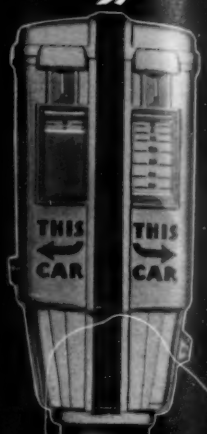
We had conducted experiments on this



SKETCHES COURTESY OF W. E. SCHWANHAUSSER

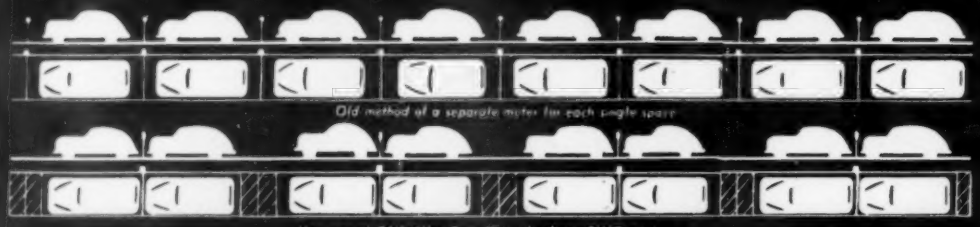
Wide street without overhead traffic signals.

Eliminate Crowded Parking In your City with . . .



ALFCO TWIN

AUTOMATIC PARKING METERS



Old method of a separate meter for each single space

New way of ONE Alfco Twin Meter for Every TWO parking spaces

The Alfco Twin Automatic Parking Meter solves many modern parking problems! It parks two cars instead of one at a much lower original cost to the city than single meters, and without reducing the number of parking spaces.

In addition to this initial savings, the Alfco Twin Meter may be maintained and serviced at but a fraction of the cost of the maintenance of out-moded single meters.

Also, the Alfco Twin eliminates crowded parking, lessens the possibilities of mishaps, helps to safely speed up arriving and departing motorists, helps eliminate traffic blocks by providing more space for easy entry and exit. (See diagram above).

The Alfco Twin is available in six different models for varying parking time limits and rates. It is ideal for parking lots as well as for parallel or angular street parking.

Orders are now being accepted for prompt delivery.

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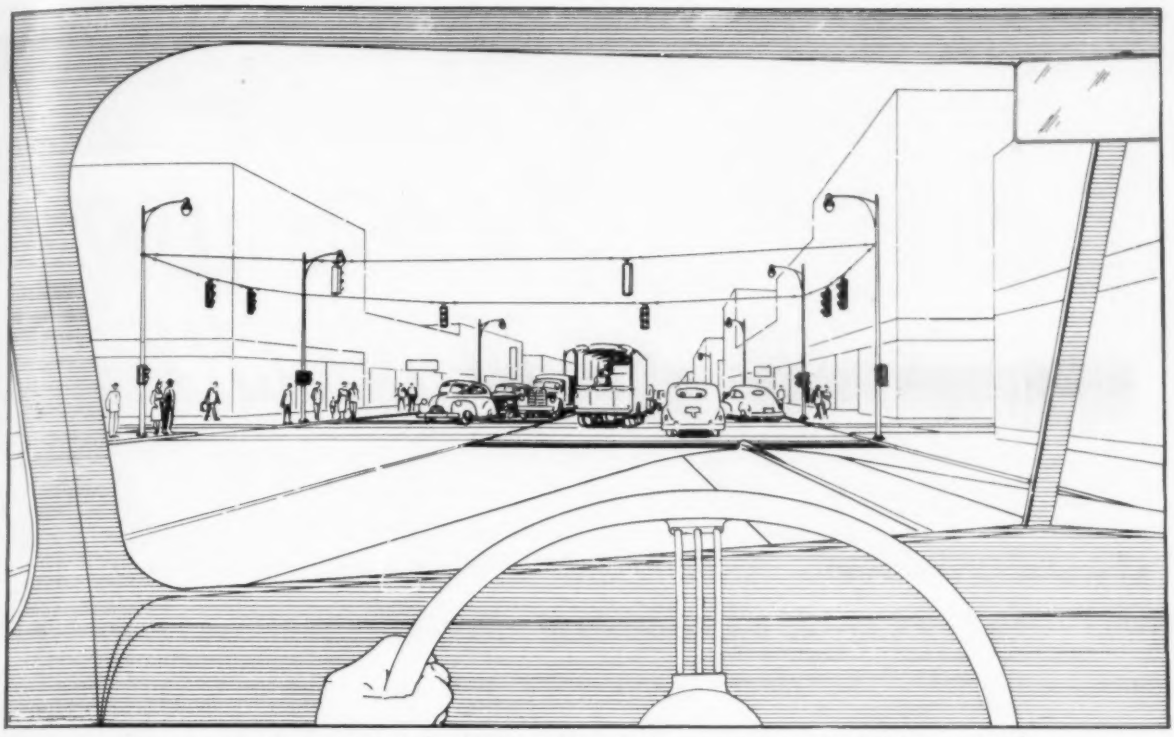


Same street with overhead traffic signals. Note signals mounted on the lighting standards.

plan prior to the war. The late John Beakey, who was the Traffic Engineer for the State of Oregon, cooperated with the city in working out this plan and made the first installation in the City of Klamath Falls, Ore., in 1940. This type of signal installation has gone beyond the experimental stage and has clearly demonstrated its effectiveness in controlling both vehicular and pedestrian traffic.

While I realize the difficulties encountered in bringing changes in an established system of traffic-signal installation, particularly where large sums have been expended on existing installations, I feel that this plan has so much merit that it warrants serious consideration by traffic engineers in the larger cities of the nation.

It is interesting to note that J. A. Carrothers was in contact with George Howie, Assistant Traffic Engineer for the City of Portland, at the Yale Traffic School, and that the exchange of information at that time was undoubtedly instrumental in the evolution of the plan of signals which was recommended by Mr. Carrothers for Peoria.

F. T. FOWLER
Traffic Engineer
Portland, Ore.

To the Editor of THE AMERICAN CITY:

Whereas there have been many trends to and from overhead signals and curb-mounted signals for controlling traffic, engineers are now approaching the problem of signalization from the viewpoint of putting signals where they can be easily seen by the traffic which they are meant to control. Consequently, pedestrian signals are put at the head of each crosswalk and mounted just above the head of the average pedestrian, 7 or 8 feet from the curb or sidewalk.

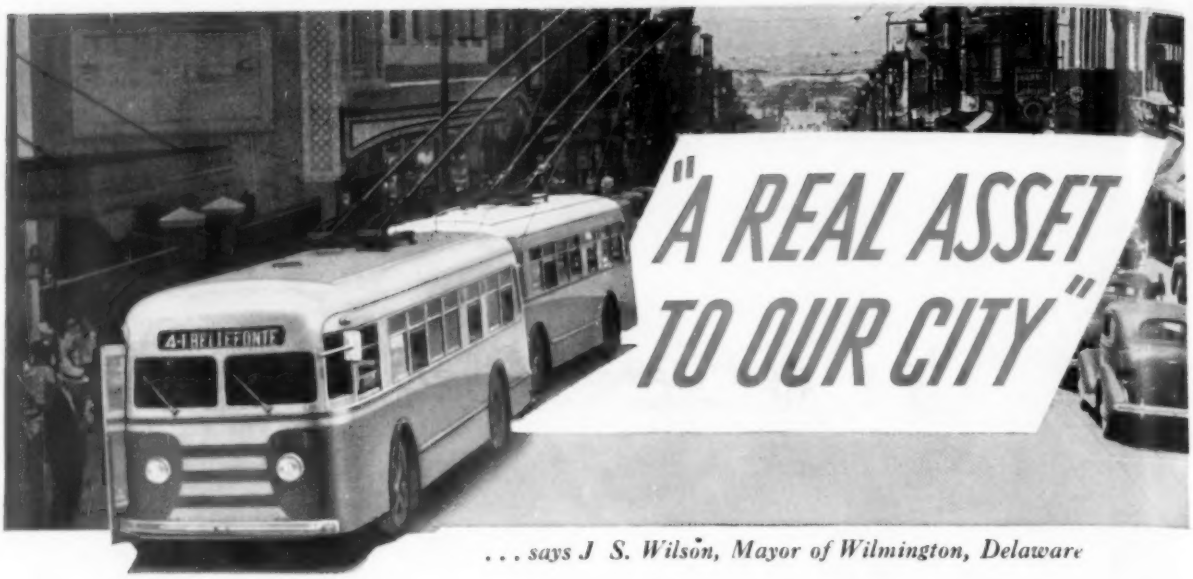
Vehicular signals are still being effectively placed, both overhead on mast-arms or span-wires and along the curb on existing or new poles. However, in all cases, it will be noted that at least two signal indications should be provided for each approach to the intersection, in accordance with the new *Manual On Uniform Traffic Control Devices*. Also, you will find that the vehicular signals are placed within 10 degrees of the drivers' normal line of vision. When so placed, the traffic signals are very hard to miss and do not necessarily have to be suspended on mast-arms overhead or on poles along the curb. However, owing to the numerous electrical signs and show-window displays on city streets, overhead signals are preferred. However, in some localities large background shields have been provided for curb-mounted signals. On wide streets, greater than 60 feet, it will be found that an overhead signal can be more easily located within the drivers' 10-degree cone of vision than can a curb-mounted signal. A comparison of the accompanying two sketches illustrate this point.

For streets 60 feet wide or less, it is quite possible that both pedestrian and vehicular signals can be located at essentially the same spot. However, the need for separate pedestrian signals may not always be warranted for intersecting streets of 60 feet or less in width. That is, it may be hard to justify their installation from an economic viewpoint. Where pedestrians are numerous and interfere with vehicular traffic or where they constitute a problem in the movement of traffic, separate pedestrian signalization is, of course, recommended.

W. E. SCHWANHAUSSER
Illuminating Laboratory
General Electric Company
West Lynn, Mass.

Parking Meters in Buffalo

SINCE parking meters were installed in Buffalo, N. Y., on August 27, 1940, revenues have totaled $491,518. Except for the purchase of 50 meters to replace those worn out, no further meter acquisitions were made until August 1947. In this month, the Common Council approved the recommendation of the Board of Safety that meter use be extended in the downtown area and used for the first time in outlying business districts. A total of 2,446 new automatic meters were purchased for a contract price of $143,218 and have now been installed. Neighborhood business districts received 641 of the new meters, 800 were used to replace old meters, and 1,005 were placed in new sections of the downtown shopping district.



. . . says J S. Wilson, Mayor of Wilmington, Delaware

TROLLEY COACHES are carving big chunks out of Wilmington's traffic jams, boosting business and realty values. No wonder they're a hit with riders, merchants, and taxpayers!

"the people's choice"

says His Honor . . .

"We've never regretted our decision to convert our transportation system to trolley coaches. They're quiet, safe, comfortable, well lighted, well ventilated, and capable of excellent operation on hills—the favorite vehicle with our 140,000 transit riders!"

"they keep traffic moving"

says City Engineer E. F. Koester . . .

"We noticed a great improvement in the easing of traffic congestion soon after the trolley coaches were installed. They load at the curb, are big, speedy, and maneuverable. In fact, they set the pace for all traffic."

"a boon to real estate and business"

says C. of C. Executive Manager G. Gassaway . . .

"One of our heaviest building construction areas is along the Newport Pike. We feel that the excellent trolley-coach service there has improved real estate values greatly. And as for helping downtown business, here's how our merchants look at it. If the 19,000 shoppers who come into the central area daily by trolley coach had to depend on automobiles, the whole central area would be tied up and business would fall."

GENERAL ELECTRIC

For results like these, discuss with your transit company the possibility of making electric transit vehicles the backbone of your city's transportation system. Your G-E transportation engineer will gladly help you decide where they can be economically best applied. Apparatus Dept., General Electric, Schenectady 5, N. Y.

Who Takes the Initiative in Parking And Truck-Loading Facilities?

By THEODORE M. MATSON, *Director*
Bureau of Highway Traffic
Yale University
New Haven, Conn.

CURB-PARKING and truck-loading facilities in most urban areas are grossly inadequate and are therefore becoming subject to increasingly more stringent regulations. As the demand for street space for movement increases, curb parking and loading must continue to wither away and in the larger centers will become outlawed.

It follows that more off-street parking and loading terminals must be developed. How shall they be financed, and what policies, programs, and procedures should be employed for the common good of the urban community as a whole?

The value of real property for commercial purposes is closely linked with its accessibility to the population and the other resources of the community.

From the viewpoint of the private automobile or truck operator, the advantages of suitable terminals for the vehicles and the goods they contain are evident. Because those properties in the central business districts contribute heavily to the tax income of a city, any change in their assessed value will modify tax rates in the outlying areas and in this case the entire community of interest, for as the relatively heavy burden of taxes leaves the central business district, it is inevitably passed to the outlying sections of the city. This change, however, is slow and subtle. It is not a satisfactory basis for winning elections by those officials who are elected by majority vote.

Three Motivating Forces

And so it is seen that the motivating forces to be harnessed in the development of highway-terminal facilities are threefold: (1) the individual landowner who uses land in such a way as to create a highway-terminal demand; (2) the users of highway vehicles themselves; and (3) the community of interest which exists by juxtaposition of land holdings directly or indirectly through the tax structure.

Governmental officials, dependent on the electorate for their position, cannot assume strong leadership, but rather are sensitive only to reflecting the wishes of the electorate. It seems to follow, therefore, that the leadership in the struggle for off-street parking facilities must arise from the relatively small number of landowners and their supporters whose property values are affected by parking conditions. Such leadership presupposes group action because of the community interest inherent in parking facilities, which are as essential to stores, office buildings, and manufacturing plants as are the display counters, elevator lobbies, and storage bins. Adequate terminals for the accommodation of patrons, parkers, and goods suited to automotive methods of transportation are essential in the competition to serve a given population. Much has been done in the last few years, both legislatively and by actual construction, to solve these problems.

Excerpts from a paper presented at the Business Men's Conference on Urban Problems, Detroit, September 13-14.

Clipping at right is from the editorial page of *The New York Times*. New York hasn't parking meters as yet, but maybe they're getting warm.

WHY FREE PARKING?

The New York City Government is now operating two parking lots, one on the old World's Fair site in Queens and the other in downtown Brooklyn on a cleared site intended eventually for the proposed Civic Center. Policemen are assigned to the operation, and others are on duty near by to direct the increased traffic. Since these plots are not immediately needed for other purposes, and since there is a dire need to reduce street congestion, we commend their use for temporary parking lots as a fine, sensible idea. The only question is, Why should the city, which is always complaining of the need for more revenue, be furnishing parking space to motorists for nothing?

At the World's Fair site 1,600 cars are being handled daily, on the average, as against 600 four months ago. The field has been in operation only since mid-November. The Cadman Plaza lot in Brooklyn has been open only about four months but is described as an overwhelming success already, both for short-time shoppers and all-day parkers. Motorists are turned away daily, it is said. The ground on which these fortunate people park free in Brooklyn is fairly valuable. The assessment, before the property was removed from the tax rolls in 1939 for public use, was $2,690,000. At today's tax rate the revenue to the city from a property of that value would be about $80,000 a year. When police salaries are added to these parking lot operations, it can be seen that the city subsidy in a year mounts up to a fairly tidy sum.

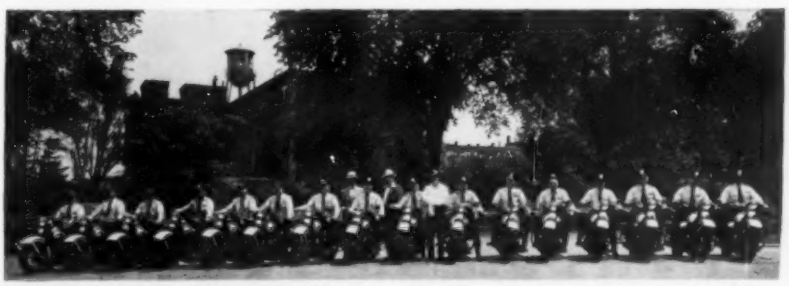
We are in favor of more parking facilities, but we think motorists should foot the bill. A slight taint of commercialism would be a welcome addition to this operation, and make the city seem more businesslike. It could be done with parking meters, with a reasonable charge to motorists that would still bring in a good many thousand dollars in a year. Why not?

Trolley Coaches in Wilkes-Barre

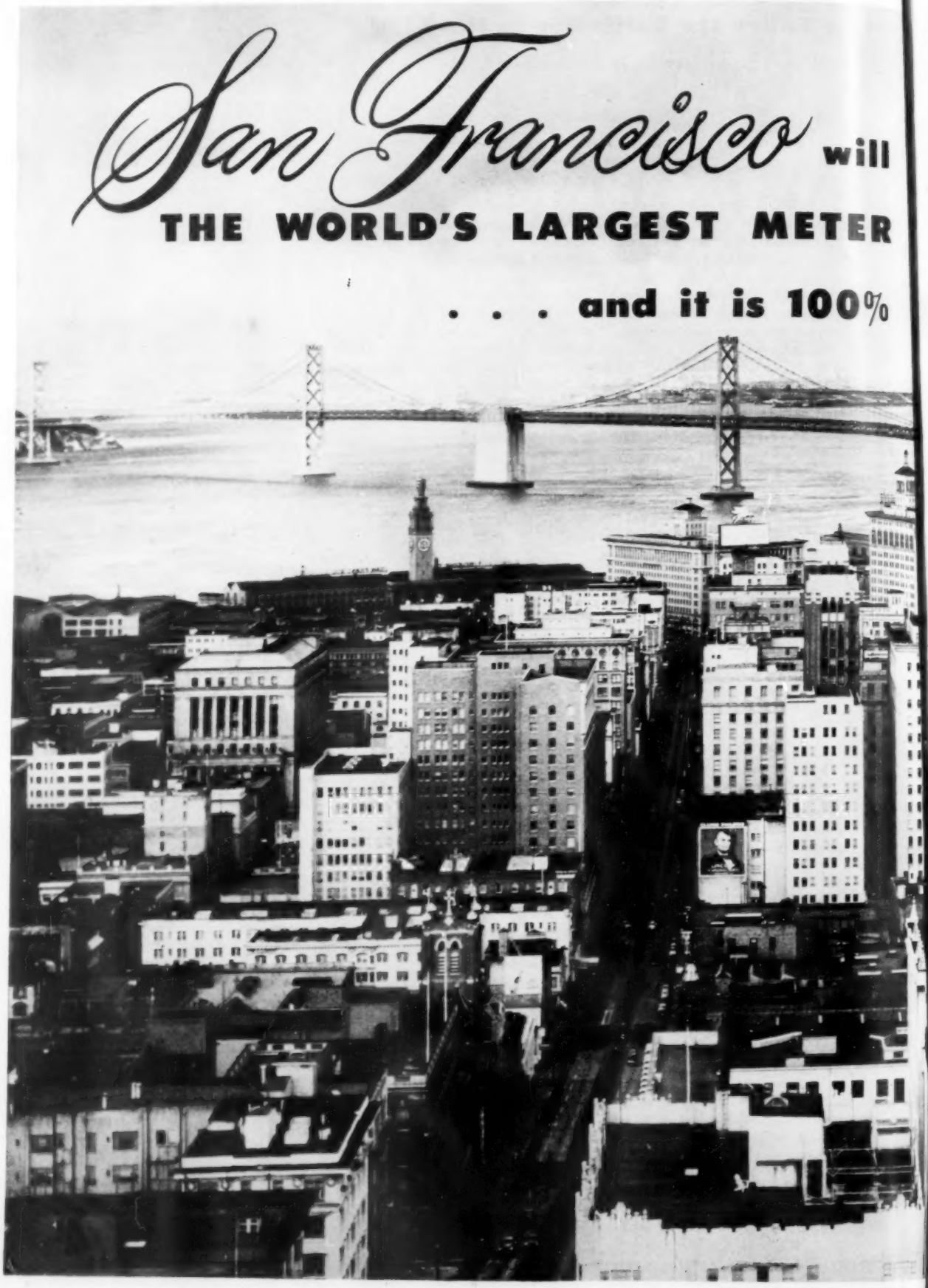
AFTER a year and a half of operation of six G-E-equipped trolley coaches, Wilkes-Barre's Sugar Notch route shows an increase in revenue of 15% and a decrease in maintenance costs of 20%. The coaches replaced street cars on the route.

The Sugar Notch line, considered by the Wilkes-Barre, Pa., Railway Company to be a typical trolley-coach route, handles an average of 265,000 passengers monthly over a hilly stretch with grades up to 8%. Approximately half the route is through heavy traffic with light traffic prevailing in the other half. Coaches are run with 10- to 20-minute headways with a scheduled speed of 10.8 miles per hour, including layovers. At present the company is operating 61 trolley coaches.

New Motorcycles for Chicago Police



Sixteen Chicago police officers astride new motorcycles near the Harley-Davidson Motor Co., Milwaukee, Wis. After being "shot" they rode them to Chicago.


San Francisco will
THE WORLD'S LARGEST METER
. . . and it is 100%

Zoning and Planning Notes

Edited by NORMAN WILLIAMS, JR.

Pennsylvania Parking Authorities Law Upheld

PENNSYLVANIA. *McSorley v. Fitzgerald*, 59 Atlantic (2d) 142 (Pennsylvania Supreme Court, May 24, 1948).

After a lengthy recital of legislative findings on traffic congestion and the need for off-street parking facilities, the Pennsylvania Parking Authorities Law of 1947 authorized cities of the second class to organize Parking Authorities, in order to study traffic and parking needs and to establish appropriate parking facilities. The activities of the Authorities were declared to be for a public purpose, and the power of eminent domain was granted. Pursuant to the statute the Pittsburgh City Council created a Public Parking Authority of Pittsburgh and made a loan to it. The Authority was to be tax-exempt, but could make payments in lieu of taxes; but it could not sell gasoline or accessories, or carry on a repair service. A taxpayer's action challenged the declaration of public purpose and the use of public moneys for the Authority.

The Pennsylvania Court reviewed the acute traffic situation in Pittsburgh, and, as in *Belovsky* v. *Redevelopment Authority of Philadelphia*, 357 Pennsylvania 329, 54 Atlantic (2d) 277 (1947), proceeded vigorously and enthusiastically to emphasize the breadth of the concept of public purpose in Pennsylvania:

> Not only is the declaration of legislative findings in the present Act impressive in pointing out the urgent need of legislation of this type, but the conditions it portrays are well known to all inhabitants of our larger cities. It is unfortunate that many operators of automobiles habitually ignore the fact that highways are intended primarily for travel and not for storage of vehicles other than by way of transitory stops for loading and unloading. The congestion caused by such misuse of the streets and by the ever-increasing amount of motor-vehicle traffic has become a major problem of municipal administration. . . .
>
> Those attacking the constitutionality of a law such as that which is here under consideration obviously labor under the mistaken notion that its purpose is merely to cater to the convenience of the owners and operators of motor vehicles; on the contrary its effect may be to interfere with the perhaps greater convenience of parking on the public streets; its real purpose is to promote the larger and more general good of the community by freeing the streets of the impediments and perils arising from dangerous and often intolerable conditions of traffic congestion.
>
> . . . It is no constitutional objection to the statute, nor does it derogate from the public character of its objective, that the Authority will to some extent conduct what may heretofore have been regarded as a private enterprise; to hold otherwise would mean that the State would be powerless, within constitutional limitations, to act in order to preserve the health and safety of its people even though such action were imperative and vital for the purpose.
>
> What the Court holds, therefore, is that where, as here, the contemplated use of property is in aid of, and ancillary to, the police power, the public nature of such use is conclusively determined, and therefore the State may, where the use of the highways is hampered by a local lack of parking facilities, authorize the municipal acquisition and operation of publicly owned and operated parking facilities reasonably calculated to alleviate that condition.

Exchange of Land Obtained Through Tax Title Foreclosures

NEW JERSEY. *Fraser* v. *Teaneck Township*, 58 Atlantic (2d) 610 (New Jersey Supreme Court, April 26, 1948).

Following a recommendation by the Teaneck Planning Board, the Teaneck Town Council arranged to exchange 152 vacant lots obtained by tax title foreclosure for certain land which was owned by an estate and could be developed for park and recreational purposes. Although a group of taxpayers publicly agitated against the exchange, no objections were offered at a public hearing where the resolution was actually passed. Nevertheless the same group brought certiorari to review the arrangement, and alleged that the question should have been submitted to a referendum, that the statutory sanction for the exchange was unconstitutional for a variety of reasons, and that the lands to be acquired were of less value. The Court upheld the statute and the proceedings.

In the opinion three New Jersey statutes were construed together as authorizing a municipality to exchange tax-title-foreclosure lands for lands acquired for park purposes, by means of a resolution rather than by referendum. The Court decided that the lands to be obtained by the Township were of considerably greater value than the scattered lots, and noted that the opposition witnesses had neither been properly qualified as real-estate experts nor made any attempt to appraise the lands offered in exchange.

Exclusion of Land from Town—Platting

SOUTH DAKOTA. *Waring* v. *Town of South Sioux Falls*, 31 North Western (2d) 766 (South Dakota Supreme Court, March 29, 1948).

A proceeding to exclude from the town limits of South Sioux Falls three sections of land some distance outside was rejected by the Town Board of Trustees, but approved on appeal to the South Dakota courts. The statutory requirement that land to be excluded must not be "laid out into lots and blocks" was held by the Supreme Court to refer only to subdivisions for urban use, and not to include the sections here involved, which had been purchased by the Federal Government and platted by the Farm Security Administration as a "Farmstead Project." It was particularly noted that the only municipal service provided for the area in question consisted of grading the highways. Moreover, the Court held that, in computing whether the petitions were signed by the owners of three-quarters of the property according to value, the value of electric utility and pipe lines on the property should be ignored.

New Jersey Urban Redevelopment Law Upheld

NEW JERSEY. *Redfern v. Board of Commissioners of Jersey City*, 59 Atlantic (2d) 641 (New Jersey Court of Errors and Appeals, May 13, 1948).

Under the elaborate procedure set forth in the New Jersey Urban Redevelopment Law of 1946, a municipality would take over land and a private lessee would build and manage a housing project on the property, with the project reverting to the municipality after 60 years. The Prudential Insurance Company proposed such a project on mostly vacant land in Jersey City, to consist of nine buildings containing 653 garden apartments, and 100 garages; and Jersey City passed ordinances approving the contract and lease with Prudential and providing for acquisition of the required land. In the present case, the highest New Jersey Court unanimously upheld the constitutionality of the statute and ordinances. Since the proceedings in question were completed before the New Jersey Constitution of 1947 came into effect, the decision was based on the old Constitution of 1844.

In deciding that the proceedings for this project were for a public purpose and therefore valid, the Court reviewed briefly the background and statistics on the housing shortage, and concluded that the pressing need for housing was so well known that little more need be said about it. The situation was summarized with a masterpiece of understatement:

> "Civilized men cannot live in this climate without suitable homes."

The familiar arguments that proceedings such as these involved donation of land to a private organization, and that the tax exemption violated the requirement of uniform assessment, were dismissed with the familiar refutations.

This opinion, while pallid in comparison with the recent Pennsylvania decisions,* should be sufficient to forestall any future obstruction in this particular field by the New Jersey courts. The doubt expressed by the Court as to whether the grant of power in the 1947 New Jersey Constitution to deal with blighted areas could include vacant lands is on dubious ground economically, and in any case the present opinion should clear the way for all future similar projects.

* See *McSorley* v. *Fitzgerald*, discussed above, *Belovsky* v. *Redevelopment Authority of City of Philadelphia*, discussed in THE AMERICAN CITY for April 1947, page 127, and November 1947, page 121.

THE MUNCIE STAR
MUNCIE, INDIANA, SUNDAY, JULY 18, 1948
TEN CENTS
MUNCIE STREETS NOW "BRIGHT AS DAY"
New Street Lighting System ups Night Visibility more than 50%
Long Separation Is Ended
Thurmond and Wright
Draft Setup Again Ruled by Hershey
He's Goodest "Good Egg"
High Allied Quarters in

Midwest metropolis makes *Lighting* news!

Modern Street Lighting provides far greater After Dark Safety for residents of Muncie, Indiana, with more than 3½ times as much illumination per Lighting Dollar Spent!

Muncie's business district before new street lighting was installed.

A NEW, modern Street Lighting System now safeguards night traffic in Muncie, Indiana.

For this progressive midwest metropolis has just completed more than 30 miles of modern street lighting in residential areas and business districts, representing one of the finest installations of its kind in the country.

1600 highly effective luminaires containing 6,000 and 10,000 lumen lamps mounted on 6-foot Brackets attached to all-steel standards 25 feet high, with an average spacing of 100 feet, provide illumination varying from 1.10 to 1.48 foot-candles throughout the city.

The project represents a planned Street Lighting Program to keep Muncie in the forefront as an alert American city . . . safe, energetic and growing.

An efficient utility, the Indiana and Michigan Electric Company, working in unison with city officials, effected this outstanding municipal achievement.

FOR MORE FACTS . . .

Write for your free copy of "A Planned Program for Better Street Lighting."

The Street and Traffic Safety Lighting Bureau, 155 East 44th St., New York 17, N. Y.

Legal Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS
Charles S. Rhyne, General Counsel

Annexation—Agricultural Land

Where city sought to annex 2,000 acres of land to city, of which 90 acres was agricultural, held that refusal to permit annexation was proper. *City of Newport* v. *Owens*, 211 S. W. (2d) 438 (Ark., May 17, 1948). *Reh. den.* June 14, 1948.

Annexation—Invalidity of Ordinances Under Statute Requiring Territory Be Bounded by Village or Navigable Waters

Where village attempted by eight ordinances to annex adjacent territory, held that the territory in none of the ordinances was wholly bounded by one or more municipalities or by one or more municipalities and navigable waters as required by statute and annexation would not be permitted. *People* v. *Village of Lyons*, 79 N. E. (2d) 33 (Ill., Mar. 18, 1948). *Reh. den.* May 13, 1948.

Bonds—Issuance for School District—Constitutionality of Election Allowing Tax-Exempt Persons to Vote

In action by taxpayer to enjoin issuance and sale of school-district bonds alleging disregard of constitutional limitation on bonded indebtedness for school purposes and challenging fairness of election, held that election was not unfairly conducted because veterans and widows who were exempt from taxation were permitted to vote and that the indebtedness was not beyond limitation set by constitution. *Moran* v. *Board of Supervisors of Maricopa County*, 192 Pac. (2d) 236 (Ariz., Apr. 5, 1948).

City Employees—Action on Reduction In Salary of Police and Firemen for Years 1932-1936 Barred by Limitation and Laches

Where city employees accepted cut in salaries during years 1932-1936 on claim by city that there was insufficient revenue to enable city to retain force and pay full salaries, held that action filed by such employees in 1944 was barred by limitations and laches. *Scott* v. *City of Los Angeles*, 193 Pac. (2d) 25 (Cal. App., May 4, 1948).

Civil Service—After Passing Written Examination Applicant Entitled to Minimum Passing Grade on Experience and Training

Where petitioner took and passed written examination for New York City Civil Service position, but Commission rejected her application on grounds of "lack of experience and training," held that Commission should have held that petitioner was entitled to at least minimum passing grade on experience and training after she has passed written examination. *Silbermann* v. *Morton*, 78 N. Y. S. (2d) 104 (N. Y. Sup. Ct. Bronx Co., Apr. 6, 1948).

Housing—City Project Attacked as Not "Low-Rent" Housing

In action to enjoin City of New York from project on ground that rentals would not constitute project one for low-income families, held that provision of housing facilities for families with incomes higher than the very lowest would not be illegal, and complaint based on information and belief could not overcome presumption that project would be operated in accordance with state law. *Neufeld* v. *O'Dwyer*, 79 N. Y. S. (2d) 53 (N. Y. Sup. Ct., N. Y. Co., Apr. 12, 1948).

Jehovah's Witnesses—Distribution of Literature in Apartment House—Regulations Forbidding Upheld

In action to have regulations of apartment-house owner which forbade entry into apartment building for purpose of canvassing, soliciting, or distributing literature without prior consent of tenant declared unconstitutional, held that such regulations do not deprive members of Jehovah's Witnesses of freedom of speech or worship. *Watchtower Bible and Tract Society* v. *Metropolitan Life Insurance Company*, 79 N. E. (2d) 433 (N. Y., Apr. 22, 1948).

Negroes—Swimming Pools—Rights to Equal Municipal Facilities

Where City of Montgomery denied right to Negro to use municipal swimming pool because of race, held that injunction would be granted restraining city from denying such right unless city provided equal swimming-pool facilities to persons of Negro race. *Lawrence* v. *Hancock*, 76 Fed. (2d) 1004. (U. S. D. C. S. D., W. Va., Feb. 11, 1948).

Nuisances—Dwellings—Unlawful Use Of—Right of City to Enjoin

In action by city to have dwellings demolished as public nuisance because they were used as bawdy houses and for unlawful sale of intoxicating liquor, held that city could enjoin use of premises for unlawful purposes but could not order dwellings demolished. *Eschave* v. *City of Grand Junction*, 193 Pac. (2d) 277 (Colo., Apr. 26, 1948).

Officers—Service for One Year After Term Expired Authorized by Statute

Where City of Indianapolis and Marion County officials were required to serve an additional year because of statute changing time for holding elections and such officers were voted an increase in salary for that year and taxpayer brought action alleging illegality of both term and increase in salary, held additional year's service was legal by statute which provides that officers shall hold office until successors are elected and officers were entitled to increase in salary after elective term had expired. *Swank* v. *Tyndall*, 78 N. E. (2d) 535 (Ind., Apr. 7, 1948).

Policemen—Accident with Patrol Car—City Must Be Made Party to Complaint and Be Given Notice

In action against city police officer of City of Utica for negligent operation of police patrol car, who, at the time of accident, was acting in performance of duties and within scope of employment, held that complaint which did not make city a party to action and failed to give notice as required by statute would be dismissed. *Feisthamel* v. *Roczen*, 78 N. Y. S. (2d) 21 (N. Y. Sup. Ct. App. Div., Mar. 10, 1948).

Policemen—Civil Service Examination—Elimination of Non-Competitive Questions

Where New York City Civil Service Commission conducted written promotion examination for position of sergeant of police department consisting of 90 "multiple-choice" questions, and commission afterwards published tentative key answers which included two or more answers to nine of 90 questions, held that such questions would be eliminated from examination and necessary adjustments made in credits on each of remaining questions. *Blumenthal* v. *Morton*, 78 N. Y. S. (2d) 302 (N. Y. Sup. Ct., Apr. 12, 1948).

Public Utilities—Eminent Domain—Evidence Establishing Prima Facie Case of Necessity

In action by city to acquire land owned by defendants for water-works and electric facilities by eminent domain where defendant denied that all land sought to be condemned was necessary for such use, held that city by introducing in evidence certified copy of resolution passed by city council showing that entire tract was necessary for public purpose established a prima facie case of necessity for entire tract. *City of Eugene* v. *Johnson*, 192 Pac. (2d) 251 (Ore., Apr. 13, 1948).

Sidewalks—Owner's Non-Compliance With Ordinance—City Estopped Where Work Nearly Completed

In action against city to enjoin breaking up and removing sidewalk because of non-compliance with city ordinance, held that by permitting owners to proceed with construction for six months and within 90% of completion city was estopped from compelling owners to comply with ordinance. *Rubinstein* v. *City of Salem*, 210 S. W. (2d) 382 (Mo. App., Apr. 6, 1948).

Slot Machines—Action by Uninterested Plaintiff to Restrain Destruction By City

Where city seized slot machines and intended to destroy them under provisions of state law, held that individual who owned none of such machines could not prosecute action to enjoin destruction on ground of preventing wasting of municipal funds through damage claims of owners arising because of alleged unconstitutionality of statute relating to seizure and destruction of slot machines. *Smith* v. *City of Buffalo*, 78 N. Y. S. (2d) 540 (N. Y. Sup. Ct., Erie Co., Mar. 30, 1948).

Streets—Assessments Levied for Improvements on Joint Tenacy Property

Where one joint tenant had objected to city's letting contract for street-improvement district and levying assessments on abutting property for cost of improvements, held that where one resident joint tenant files objection and another does not, presumption arises that tenant objecting represented joint tenacy and city must overcome such presumption. *Bonner* v. *City of Imperial*, 32 N. Y. (2d) 267 (Nebr., May 12, 1948).

Streets—Rights Given to Erect Structures in—Revocation by Village

In action by village to enjoin defendant from occupying and maintaining structures formerly erected by railroad on village streets, held that village could have revoked railroad's right to use the street at any time and therefore could revoke defendant's right. *Village of Skaneateles* v. *Barber*, 78 N. Y. S. (2d) (N. Y. Sup. Ct., Onondaga Co., Sept. 9, 1947).

Taxation—Tax Situs of Barges in Interstate Commerce

In action by non-resident barge companies to recover ad valorem taxes assessed and collected by City of New Orleans and State of Louisiana, held that tax situs is not established by regular or irregular stops in ports in non-domiciliary states of watercraft moving in interstate commerce, that such crafts are taxable only by state of owner's domicile. *Ott* v. *De Bardeleben Coal Corp.*, 166 Fed (2d) 509 (U. S. C. C. A., Fifth, Mar. 5, 1948).

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The Municipal Bond Market

WITH a continuing large volume of state and municipal borrowing assured by the bonds approved in the November general election, the status of the municipal bond market is a matter of timely interest.

The market through the first ten months of 1948 has been characterized by relatively minor fluctuations rather than by any pronounced trend. The decline in municipal bond prices that continued from the spring of 1946 through 1947 reached bottom in March, 1948. In this period *The Bond Buyer's* 20-bond index of yield rose from 1.29% to 2.47%. Through April and May the market staged a moderate recovery, and by June 3 the yield index had declined to 2.23%. Thereafter, however, the market again weakened, and by October 7 the index had risen to 2.43%, a return to the level that had been reached in March. Accounting for this reversal was the persistently large volume of new offerings, the accumulation of over $100 million unsold bonds in dealers' hands early in June, the rise in short-term money rates, the Federal Reserve Board's order in September increasing bank reserve requirements, and the record purchases of U. S. securities which the Federal Reserve System was required to make in that month in order to maintain long-term government bonds at par.

By the middle of October, nevertheless, the municipal market was showing more strength. As the result of a lull in new offerings in late September and early October, dealers had been able to reduce their inventory of unsold bonds to around $50 million and to close out a number of old accounts. Competition for new issues was more brisk and there was accelerated activity in preparation for the offering of several large revenue bond issues. The market, in general, was slightly above the low point reach in March. The situation is well illustrated by quotations on the only domestic municipal bond listed on the New York Stock Exchange, New York City's Rapid Transit 3s of 1980. Compared with a range of 107-100¾ for the year, their closing price on October 14 was 102¼.

Improving Government Means Lower Interest Rates

A feature of the present municipal bond market not to be overlooked, however, is the increasing discrimination being exercised by underwriters and investors in the acceptance of new bond offerings. An interesting comparison came to light in October when two local governments suburban to Washington, D. C., made public offerings of bonds only a day apart. Washington Suburban Sanitary District, Md., whose bonds are guaranteed by Montgomery and Prince George's Counties, offered on October 13 $2,000,000 water and sewer bonds due serially from 1949 to 1988. The bonds were sold at a net interest cost of 3.155%. On October 14, Arlington County, Va., offered $1,776,000 school bonds due serially from 1949 to 1973, and sold them at a net interest cost of 2.457%. Partially accounting for the difference in cost, of course, was the 15-year difference in the maturity period. But there was a wide variation, also, in the prices at which identical maturities were offered by the underwriters to their clients. The bonds due in 1958, for example, were offered to yield 2.00% and 2.70%, respectively, while for those maturing in 1973 the figures were 2.60% and 3.05%. The two areas have much in common as rapidly growing residential suburbs of the nation's capital, but the purchasers of the bonds quite evidently took into consideration such factors as a debt load of the Maryland unit which is eight times as heavy as that of the Virginia unit, and the continuance in the area of the former of antiquated county government while the latter operates under a modern county manager system.

By FREDERICK L. BIRD
Director of Municipal Research
Dun and Bradstreet, Inc.

J. HORACE McFARLAND — 1859-1948

ON OCTOBER 2, J. Horace McFarland, of Harrisburg, Pa., died in his 90th year. For more than half of his long and useful life, Dr. McFarland was an inspiring and effective leader in national and local civic activities.

In the field of national organizations, he became president in 1902 of the newly established American League for Civic Improvement, and two years later of the American Civic Association, which was a merger of this organization and the American Park and Outdoor Art Association. For twenty years Dr. McFarland toured the country, urging citizens to improve their home grounds, their neighborhoods, and their cities. His illustrated talks were in great demand and stimulated civic improvement in many localities. He was one of the pioneers to advocate city planning and zoning and served on the Advisory Committee on City Planning and Zoning of the U. S. Department of Commerce, in connection with the Standard State Zoning Enabling Act and Standard City Planning Enabling Act, which for more than twenty years exercised a potent influence on city planning and zoning administration in the United States.

One of the first projects undertaken by the American Civic Association under the leadership of Dr. McFarland was the saving of Niagara Falls from destruction by diversion for power. His efforts resulted in the Burton Treaty between the United States and Canada, and in 1926 he was appointed by the President to the Niagara Board of Control.

Representing the American Civic Association, Dr. McFarland attended the Conservation Conference of Governors called by President Theodore Roosevelt in 1908 and there raised his voice for the preservation of natural scenery. He very soon conceived the plan to establish a federal agency for national parks and, working with Frederick Law Olmstead in cooperation with Stephen T. Mather and Horace M. Albright, succeeded in persuading Congress in 1916 to enact the legislation to create the National Park Service.

Dr. McFarland received many honors, a degree from Dickinson College and medals for achievement in horticultural and civic fields. In addition to his many national connections, he worked long and earnestly for the improvement of his home town. He was secretary and prime mover of the Civic Club of Harrisburg from 1907 until 1945. Working with Vance McCormick, he is generally credited as being the spark plug of the movement which resulted in the improvement of the Harrisburg riverfront, so that today every traveler approaching the city by car or train across the Susquehanna River can see the fine park development which serves as an entrance to the city.

For seventy years, Dr. McFarland earned his living as a master printer. The Mount Pleasant Press and the J. Horace McFarland Company became known throughout the world for fine printing, and especially for colored plates of flowers and trees.

Dr. McFarland wrote many books on horticultural subjects and his name is almost synonymous with roses. For many years he edited the *American Rose Annual* and the *American Rose Magazine*, both of which were highly influential in promoting the intelligent growing of roses in America. After 1916 he devoted a great deal of time to the American Joint Committee on Horticultural Nomenclature. In 1912 he established at Breeze Hill his testing garden which was known to every rose grower in the country.

Dr. McFarland was a distinguished and useful citizen in the fields of conservation, horticulture, civic improvement, city planning, music and art. His influence will be effective for many years to come.

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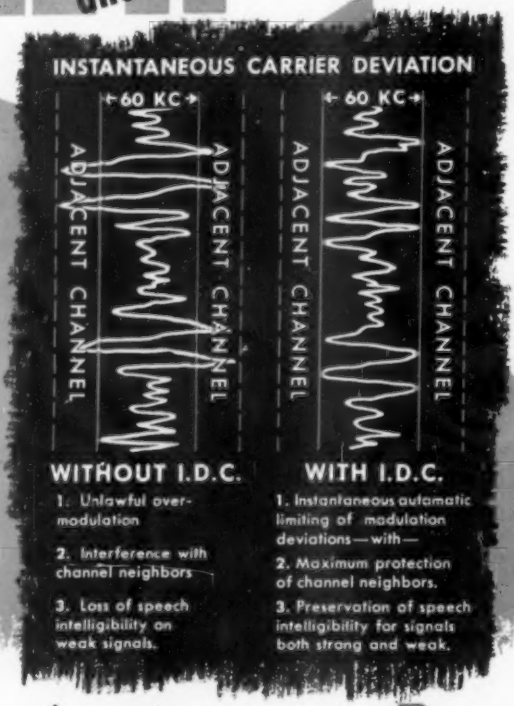

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Conventions—When and Where

Conventions listed this month for the first time are indicated by an asterisk (*)

Nov. 4-5—Edgewater Park, Miss.
SOUTHEASTERN ASSOCIATION OF STATE HIGHWAY OFFICIALS. Annual Meeting (Hotel Edgewater Beach). Sec.-Treas., A. Reese Harvey, Alabama State Highway Dept., Montgomery, Ala.

Nov. 4-6—Atlantic City, N. J.
AMERICAN WATER WORKS ASSOCIATION—New Jersey Section. Fall meeting (Hotel Madison). Sec., C. B. Tygert, Box 178, Newark 1, N. J.

***Nov. 6-9—Miami, Fla.**
FLORIDA STATE FEDERATION OF PLANNING AND ZONING BOARDS. Annual Convention. Exec. Dir., J. O. Preston, Dade County Zoning Dept., Miami 32, Fla.

Nov. 8-10—Asheville, N. C.
AMERICAN WATER WORKS ASSOCIATION—North Carolina Section, and North Carolina Sewage Works Association. Annual Convention (Hotel George Vanderbilt). Sec.-Treas., George S. Moore, P. O. Box 125, Albemarle, N. C.

Nov. 8-10—Atlantic City, N. J.
NEW JERSEY STATE LEAGUE OF MUNICIPALITIES. Annual Conference (Hotel Chalfonte-Haddon Hall). Exec. Sec., James J. Smith, 1212 Trenton Trust Bldg., Trenton, N. J.

Nov. 8-12—Boston, Mass.
AMERICAN PUBLIC HEALTH ASSOCIATION. Annual Meeting. Exec. Sec., Dr. Reginald M. Atwater, 1790 Broadway, New York 19, N. Y.

Nov. 9-12—Miami, Fla.
INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual Convention (Hotel Everglades). Sec.-Treas., Chief Daniel B. Tierney, 8 Robbins Road, Arlington, Mass.

Nov. 10-12—St. Louis, Mo.
MISSOURI MUNICIPAL LEAGUE. Annual Convention (Hotel Chase). Exec. Dir., Bruce J. Carl, Columbia, Mo.

***Nov. 11-12—Tulsa, Okla.**
OKLAHOMA MUNICIPAL LEAGUE. Annual Convention (Hotel Mayo). Exec. Sec., David Fudge, P. O. Box 1214, Oklahoma City, Okla.

Nov. 11-12—Berkeley, Calif.
WESTERN GOVERNMENTAL RESEARCH ASSOCIATION. Annual Conference (Hotel Claremont). Exec. Sec., John C. Bollens, 117 University Library, Berkeley 4, Calif.

Nov. 16—New York, N. Y.
REGIONAL PLAN ASSOCIATION, INC. Annual Conference (Hotel Roosevelt). Exec. Vice-Pres., C. McKim Norton, 205 E. 42nd St., New York 17, N. Y.

Nov. 18-19—Augusta, Maine
MAINE MUNICIPAL ASSOCIATION. Annual Convention (City Hall). Exec. Sec., Leigh Webber, 97 Water St., Hallowell, Maine.

Nov. 18-19—Milwaukee, Wis.
LEAGUE OF WISCONSIN MUNICIPALITIES. Annual Convention (Hotel Schroeder). Exec. Sec., Frederick N. MacMillin, 30 E. Johnson St., Madison 3, Wis.

Nov. 18-20—Eugene, Ore.
LEAGUE OF OREGON CITIES. Annual Convention. Exec. Sec., Herman Kehrli, Bureau of Municipal Research, University of Oregon, Eugene, Ore.

Nov. 18-20—Panama City, Fla.
AMERICAN WATER WORKS ASSOCIATION—Florida Section. Annual Convention (Hotel Dixie Sherman). Sec., S. K. Keller, Box 510, Clearwater, Fla.

***Nov. 21-22—Boston, Mass.**
NATIONAL ASSOCIATION OF CIVIC SECRETARIES. Annual Meeting (Hotel Statler). Sec.-Treas., Forest Frank, 2620 Carew Tower, Cincinnati 2, Ohio.

Nov. 22-24—Boston, Mass.
NATIONAL MUNICIPAL LEAGUE. National Conference (Hotel Statler). Exec. Sec., Alfred Willoughby, 299 Broadway, New York 7, N. Y.

Nov. 29-30—Phoenix, Ariz.
ARIZONA MUNICIPAL LEAGUE. Annual Meeting (Hotel Adams). Exec. Sec., Joseph C. Furst, 15 South First Ave., Phoenix, Ariz.

***Dec. 1—New York, N. Y.**
THE ASPHALT INSTITUTE. Annual Meeting (Engineers Club). Gen. Manager, Bernard Gray, 801 Second Ave., New York, N. Y.

Dec. 2-4—Washington, D. C.
NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS. Annual Conference. Exec. Dir., Charles S. Rhyne, 730 Jackson Place, NW., Washington, D. C.

Dec. 6-8—Augusta, Ga.
AMERICAN WATER WORKS ASSOCIATION—Southeast Section. Annual Meeting (Hotel Sheraton Bon Air). Exec. Sec., W. T. Linton, Principal Sanitary Engineer, 433 Wade Hampton Bldg., Columbia, S. C.

Dec. 6-10—Washington, D. C.
HIGHWAY RESEARCH BOARD. Annual Meeting (Building of National Academy of Sciences—National Research Council). Dir., Roy W. Crum, 2101 Constitution Ave., Washington 25.

Dec. 8-11—Chicago, Ill.
AMERICAN PUBLIC WELFARE ASSOCIATION. Annual Meeting (Hotel Edgewater Beach). Dir., Howard L. Russell, 1313 E. 60th St., Chicago 37, Ill.

Dec. 13-15—Washington, D. C.
AMERICAN MUNICIPAL ASSOCIATION. Annual Convention (Hotel Statler). Exec. Dir., Carl H. Chatters, 522-526 Transportation Bldg., 17th and H Sts., NW., Washington, D. C.

Dec. 15-17—New York, N. Y.
TAX INSTITUTE, INC. Annual Meeting (Hotel Pennsylvania). Exec. Dir., Miss Mabel L. Walker, 150 Nassau St., New York 7, N. Y.

***Jan. 16-20—Chicago, Ill.**
ASSOCIATED EQUIPMENT DISTRIBUTORS. Annual Meeting (Hotel Stevens). Exec. Sec., Frank G. Knight, 360 N. Michigan Ave., Chicago 1, Ill.

Jan. 19-21—New York, N. Y.
AMERICAN SOCIETY OF CIVIL ENGINEERS. Annual Meeting (Hotel Commodore). Sec., William N. Carey, 33 W. 39th St., New York, N. Y.

***Jan. 21-22—New York, N. Y.**
NEW YORK STATE SEWAGE WORKS ASSOCIATION. Annual Meeting (Hotel Pennsylvania). Exec. Sec., A. F. Dappert, New York State Dept. of Health, Albany, N. Y.

Feb. 28-March 3—New York, N. Y.
THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA. Annual Convention (Hotel Waldorf-Astoria). Mng. Dir., H. E. Foreman, 1227 Munsey Bldg., Washington 4, D. C.

March 1-3—Boston, Mass.
ASSOCIATION OF HIGHWAY OFFICIALS OF THE NORTH ATLANTIC STATES. Annual Meeting (Hotel Statler). Sec.-Treas., A. Lee Grover, State House Annex, Trenton, N. J.

March 10-12—Richmond, Va.
AMERICAN CONCRETE PIPE ASSOCIATION. Annual Convention (Hotel John Marshall). Mng. Dir., H. F. Peckworth, 228 N. LaSalle Street, Chicago, Ill.

***April 11-14—Lafayette, Ind.**
ANNUAL PURDUE ROAD SCHOOL (Memorial Union Building, Purdue University). Chairman, Ben H. Petty, Professor, Highway Engineering, Purdue University, Lafayette, Ind.

***April 21-22—Hutchinson, Kans.**
AMERICAN WATER WORKS ASSOCIATION—Kansas Section, and FEDERATION OF SEWAGE WORKS ASSOCIATIONS, Kansas Section. Annual Meeting (Hotel Bisonte). Sec., Sewage Works Assn., Dwight F. Metzler, Room 2, Marvis Hall, Lawrence, Kans.

THE REFORMER

A Reformer is one who sets forth cheerfully toward sure defeat. His serene persistence against stone walls invites derision from those who have never been touched by his religion and do not know what fun it is. He never seems victorious, for if he were visibly winning, he would forthwith cease to be dubbed "reformer." It is his peculiar function to embrace the hopeless cause when it can win no other friends and when its obvious futility repels that thick-necked, practical, timorous type of citizen to whom the outward appearance of success is so dear.

Yet, in time, the Reformer's little movement becomes respectable and his little minority proves that it can grow, and presently the statesman joins it and takes all the credit, cheerfully handed to him by the Reformer as bribe for his support. And then comes the politician, rushing grandly to the rescue of the victor. And all the crowd!

The original Reformer is lost in the shuffle by that time, but he doesn't care. For as the great bandwagon which he started goes thundering past with trumpets, the crowd in the intoxication of triumph leans over the side to jeer at him—a forlorn and lonely crank, mustering a pitiful little odd-lot of followers along the roadside and setting them marching, while over their heads he lifts the curious banner of his next crusade!

Richard S. Childs

(Originally published about a quarter century ago in the *National Municipal Review*)

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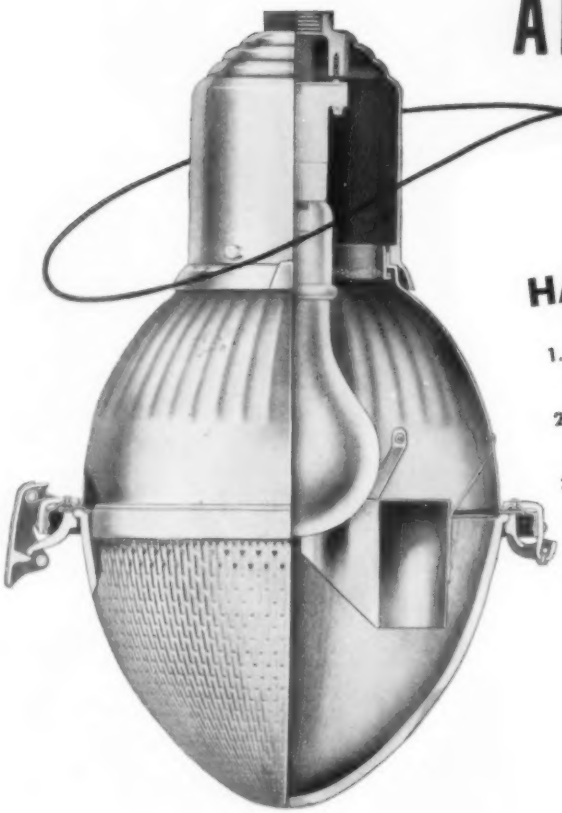

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Municipal and Civic Publications

Studies in Highway Construction

PROCEEDINGS OF THE TWENTY-SEVENTH ANNUAL MEETING, *held at Washington, D. C., December 2-5, 1947, published by the Division of Engineering and Industrial Research, National Research Council Highway Research Board, Washington 25, D. C. Editors: Roy W. Crum, Director; Fred Burggraf, Associate Director, and W. N. Carey, Jr., Research Engineer.* 523 *pp.*

Including discussions on economics, finance, and administration; design; construction and materials; maintenance, traffic and operations, and soils investigations, this illustrated book is particularly valuable for time-saving reference, since abstracts of each paper are given that contain the basic facts. Each discussion is annotated with bibliographies.

Municipal Recreation Standards

STANDARDS FOR MUNICIPAL RECREATION AREAS—*By George D. Butler. National Recreation Association, 315 Fourth Ave., New York 10, N. Y. Reprinted from "Recreation," July-August 1948.* 13 *pp.* 50 *cents.*

A discussion of the standards for municipal recreation areas proposed by national agencies, local planning and recreation authorities, and professional planners, by one of the acknowledged experts in the field. The report brings up to date standards which have been proposed in the past and which are no longer adequate. In suggesting standards for various-size communities, the report points out that standards are designed to indicate a norm or a point of departure, and have to be adjusted in the light of the conditions, needs, and resources of each individual locality. It also comments that standards need to be reviewed, appraised, and modified from time to time.

A Community School Study

A COMMUNITY STUDIES ITS SCHOOLS—*A Report by the Westport School Study Council. Westport, Conn.* 62 *pp.*

This attractive report is the result of a study by 50 citizens—parents, teachers, representatives of various civic organizations—"to determine what Westport is buying with its school tax dollars; to find out what kind of a job its schools are doing in educating pupils for a useful life; to gauge whether or not improvements can be made in equipment, administration, teaching personnel."

A survey of this sort in other communities should be enlightening not only to school boards and parents, but also to municipal officials who are often concerned as to how proposed school improvements are to fit into general municipal planning schemes.

Building Code News and References

BUILDING OFFICIALS' DIGEST—*Special Issue, September 1948. Building Officials Conference of America, 51 East 42nd St., New York 17, N. Y.* 52 *pp.*

Published especially for the annual meeting of the Building Officials Conference of America, held in New York in September, this booklet is a complete roundup of information and references on building codes and the work that has been done for their betterment.

Included in the Digest are articles on significant code work by government agencies and private organizations, the National Bureau of Standards and research in fire protection and prevention; the benefits to communities in adopting the Conference's basic building code; the American Standards Association program for improvement of building code standards; the new American Council of Building Officials proposed by the Pacific Coast Building Officials Conference; the building officials stake in the program for code reform and uniformity; and the news items about state building officials' associations affiliated with the Conference.

Family Life Conference Highlights

HIGHLIGHTS OF THE NATIONAL CONFERENCE ON FAMILY LIFE—*Published by National Conference on Family Life, 10 East 40th St., New York 16, N. Y. 1948. 23 pp. 15 cents per copy; 100 or more, 10 cents.*

This report contains a brief statement of the suggestions and recommendations that emerged from the National Conference on Family Life held in Washington, D. C., May 5-8. The general purpose of the Conference was to discover specific means by which the American family may be strengthened for the benefit of its individual members and society. Community leaders will be especially interested in those recommendations pertaining to the community's role, such as in health, housing, and recreation, for strengthening families, and suggesting ways of coordinating and making use of community resources.

Long-Term Financial Planning

LONG-TERM FINANCIAL PLANNING—*By Martin P. Jones, City Manager, Wichita, Kans. Special Bulletin, Municipal Finance Officers Association, 1313 E. 60th St., Chicago 37, Ill. 1948. 4 pp. 35 cents.*

A description of the major factors involved in long-term financial planning, including sections on "developing the plan," "estimating capital needs," "estimating revenue and determining sources," and "keeping the long-term plan current." The paper is illustrated with charts used in Wichita's capital-improvement programming.

Sewage-Disposal Laws

LAWS RELATING TO SEWERS AND SEWAGE TREATMENT FOR CITIES AND TOWNS AND SEWER DISTRICTS, *by the Bureau of Governmental Research and Services, University of Washington, in cooperation with the Washington State Dept. of Health. Report No. 87 may be ordered from the University of Washington Press, Commerce Hall, Seattle 5, Wash.* 92 *pp.* $2.00.

This booklet gives a complete listing and synopsis of laws relating to prohibition of pollution, as well as requirements and responsibilities of regulatory agencies in cities, towns, and districts.

Water and Sewage Facilities Inventory

INVENTORY OF WATER AND SEWAGE FACILITIES IN THE UNITED STATES—*Prepared by the staff of U. S. Public Health Service, Water and Sanitation Investigators Station, Kroger Bldg., Cincinnati 2, Ohio.* 900 *pp.*

This census is the first encyclopedical listing of community sanitation facilities in the United States. Previously, this information was available only in separate publications. However, this inventory furnishes details on all incorporated places with a population of over 100 and all unincorporated communities of over 500 population.

Included in the work are details on sources of water, types of water-treatment plants, methods of sewage treatment (or lack of such treatment), and sewerage facilities for each community listed. In addition, current data of basic needs in the sanitation field are furnished.

The report is supplied to all state health departments, technical journals, libraries, manufacturers of sanitary equipment, consulting engineers, and others interested in environmental sanitation activities.

Highway Finance

HIGHWAY FINANCE—*A bulletin by the Highway Research Board, National Research Council, 2101 Constitution Ave., Washington 25, D. C.* 64 *pp.*

This bulletin includes five papers sponsored by the Committee on Highway Finance and presented at the 27th Annual Meeting of the Board in December. The papers are entitled: Federal Aid Highway Program"; "Highway Finance and the Consumer"; "Long-Range Highway Program Planning"; "Highway Revenue and Expenditure Trend"; and "Long-Range Highway Modernization."

Exhibit Planning Guide

PLANNING YOUR EXHIBIT—*By Janet Lane and Beatrice K. Tolleris. National Publicity Council, 130 East 22nd St., New York 10, N. Y.* 1948. 28 *pp.* $1.00.

This "how to do it" pamphlet is intended to save time, money, and waste motion for those who plan to use store windows, booths, waiting rooms, or meeting rooms as part of their information or public relations programs. It helps to clarify the reader's thinking by pinning him down to the specific advantages and pitfalls of the exhibit method as applied to the message and the particular audience.

The booklet analyzes such display techniques as the use of photographs, live demonstrations, objects, audience participation devices, etc. It hits hard at basic principles, emphasizing clarity, simplicity, the use of strong lines, bright colors and the fewest possible elements. It is both a practical and stimulating publication, and gives many hints for the non-professional exhibitor. There are also 12 illustrations of successful exhibits sponsored by health and welfare agencies.

Social Disorganization Text

SOCIAL DISORGANIZATION—*By Robert E. L. Faris. The Ronald Press Co., 15 E. 26th St., New York 10, N. Y.* 1948. 481 *pp.* $4.50.

This book is a text for college courses dealing with social disorganization. The table of contents gives a general picture of the wealth of material included in the work. Among the chapter headings are: The Nature of Social Disorganization; Relations to Economic Disorganization and Poverty; Crime: Definition and Theories; The Vices; Suicide; Mental Abnormality; Family Disorganization; Disorganization of Religious Institutions; Political Disorganization and Corruption; Disorders of Mass Behavior and Mob Violence; Processes of Reorganization; Prospects of Stability in the Postwar Era.

The examples and cases cited help make the work interesting. A summary and list of selected references appear at the end of each chapter.

Planning and Housing Reports

MONTGOMERY, ALA.—Public Recreation in Alabama. Alabama State Planning Board, Montgomery. July 1948. Tables. Maps. Charts. Illus. 189 pp.

RIVERSIDE, CALIF.—Plans for the Coachella Valley. Prepared for the Riverside County Planning Commission, Court House, Riverside. By C. W. Eliot and D. Black. January 1948. Graphs. Tables. 31 pp. 75 cents.

TRENTON, N. J.—Land-Subdivision Guidance and Regulation in New Jersey. Bureau of Planning, N. J. State Dept. of Economic Development, Trenton. 1948. Maps. 20 pp.

NEW YORK CITY, N. Y.—Fairfield County and the Regional Plan. Published by the Regional Plan Assn., 205 East 42nd St., New York 17. Illus. 8 pp.

CLEVELAND, OHIO—An Inventory of Vacant Residential Land. By the Regional Association of Cleveland Housing Center, West Mall Drive, Cleveland. 1948. Charts. Graphs. Mimeo. 29 pp.

RICHMOND, VA.—Fees for Building, Plumbing and Electrical Inspection in Various Virginia Municipalities. By the League of Virginia Municipalities, 902 Travelers Bldg., Richmond 19. September 1948. Tables. Mimeo. 6 pp.

Other Reports Received

AUSTIN, TEXAS—Vacation—Sick Leave—Working Hours. Practices in 118 Texas Cities over 5,000 Population. By W. Terrell Blodgett. Bureau of Municipal Research, The University of Texas, Austin. August 1948. Tables. Mimeo. 23 pp.

BAYTOWN, TEXAS—Annual Budget, 1949. Compiled by Bill N. Taylor, City Manager. Charts. Tables. Mimeo.

BOULDER, COLO.—Garbage and Refuse Collection and Disposal. By R. E. Pike. Colorado Municipal League, 327 Norlin Library, Boulder, September 1948. 12 pp.

CHICAGO, ILL.—Annual Report, Department of Law, 1947. By Martin H. Kennelly, Mayor, and Benjamin S. Adamowski, Corporation Counsel. City of Chicago, 511 City Hall. Charts. Tables. Illus. 109 pp.

COLUMBIA, S. C.—Chemical Character of Surface Waters of South Carolina 1945-47. By William L. Lamar. Prepared in cooperation with the Geological Survey of the United States Dept. of Interior, Columbia. 1948. Tables. 24 pp.

COLUMBIA, S. C.—Columbia City Government. By C. L. Larsen and R. H. Stoudemire. Bureau of Public Administration, University of South Carolina, July 1948. 97 pp.

COLUMBIA, S. C.—Technical Services for South Carolina Governments. By C. L. Larsen and P. J. Jenkins. Bureau of Public Administration, University of South Carolina, June 1948. 92 pp.

EAST ORANGE, N. J.—Annual Report of the Board of Health, 1947. Charts. Tables. Illus. 78 pp.

KANSAS CITY, KANS.—Annual Report of the Board of Public Utilities, 1947. Charts. Tables. Graphs. Illus. 32 pp.

NEW ORLEANS, LA.—Semi-Annual Report, 1947. Sewerage and Water Board of New Orleans. Tables. Charts. Graphs. 127 pp

PITTSFIELD, MASS.—Annual Report, 1947. Vol. 1. No. 57. Tables. Illus. 16 pp.

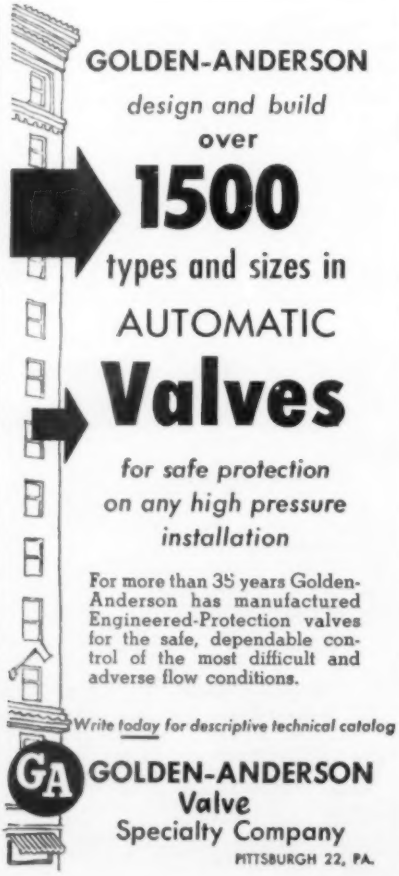
RALEIGH, N. C.—Municipal Regulation of Curb Cuts for Driveways. Compiled by North Carolina League of Municipalities. July 1948. Illus. Mimeo. $1.00.

SEATTLE, WASH.—Proposed County-City Constitutional Amendment. Bureau of Governmental Research and Services, University of Washington. September 1948. Mimeo. 43 pp.

SEATTLE, WASH. Local Ordinances. The Drafting, Compilation, Codification and Revision of Ordinances in Third and Fourth Class Cities. Bureau of Government Research and Services. University of Washington. June, 1948. Tables. Mimeo. 47 pp.

SPARTANBURG, S. C.—Your City Government, 1947. Report of the City Manager. Illus. Unpaged.

STRATFORD, CONN.—Annual Report, 1948. Charts. Tables. Illus. 67 pp.



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THREADS
No
LEAKS
THREADLESS GAS STOP
with dresser coupling
This McDonald Gas Stop with Dresser Coupling combines easy installation and long, dependable service. Special machining of body and plug assures no leaks. The plain pipe end is 40% stronger than a threaded end, and saves installation time. Pipe is in constant seal, but floats in the special rubber gasket which absorbs line shock. It's gas tight when installed, and can be easily installed under the most adverse conditions . . . even under water.
Available in ¾, 1, 1¼, 1½ and 2 inch sizes.
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A. Y. McDONALD MFG. CO.
DUBUQUE, IOWA
BRASS GOODS • PUMPS • OIL EQUIPMENT

Recent City Manager Appointments

EDWARD A. BECK, manager of South Boston, Va., since 1946; Tappahannock, Va., 1938-40; Abingdon, Va., 1940-42, has been appointed city manager of Pulaski, Va.

E. L. BOWERS, former county trustee, Carter County, Elizabethton, Tenn., has replaced M. L. Carriger as city manager at Elizabethton, Tenn.

PERCY DANIELS, former city manager of Perry, Okla., has been appointed city manager of Cherokee, Okla.

DONALD DE VINNY, former city clerk was appointed acting city manager for the balance of the year at Montrose, Colo.

EDWIN S. HOWELL was appointed the first city manager in El Cerrito, Calif.

THOMAS M. LIBBY, assistant to the city manager at Bangor, Maine, has succeeded CHARLES TUCKER as city manager of Oakland, Maine.

HAROLD V. REILLY of Teaneck, N. J., has been appointed city manager of Hackensack, N. J.

JACK TALENT, former assistant to the city manager of St. Petersburg, Fla., becomes the first city manager of Camden, S. C.

FRANCIS A. VAUGHN, former city manager at College Station, Texas, is now city manager of San Benito, Texas.

JOSEPH A. WARREN, administrative assistant to the city manager of Jackson, Mich., has become the first city manager of Ashland, Wis.

CHARLES WELLS, city manager of Albuquerque, N. M., 1934-47; general manager and chief engineer of the city water department in Albuquerque 1947-48, is again city manager of Albuquerque.

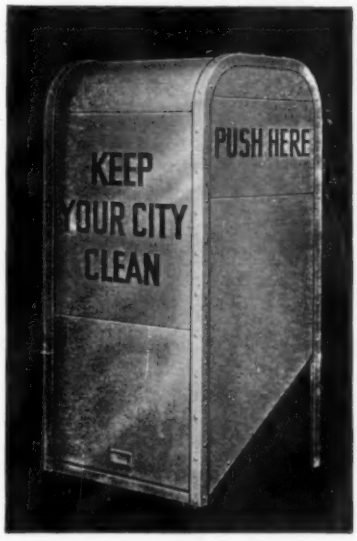
CLARENCE E. RIDLEY, *Director*
International City Managers Association
Chicago 37, Ill.

Park Avenue Relights

(Continued from page 135)

of Water Supply, Gas and Electricity, making his first public appearance as a city official, stated: "The lighting system on Park Avenue has been most inadequate, so much so that records of the Police Department show that in a period of 10 months there were 121 auto accidents, 6 persons killed, and 137 injured in this area." Revealing some interesting information in regard to the aluminum lighting standards manufactured by The Daunt Corp., Brooklyn 22, N. Y., from aluminum furnished by the Aluminum Corporation of America, Commissioner Carney stated that: "the aluminum poles that are being installed on Park Avenue weigh 200 pounds each, while a similar pole of gray iron weighs approximately 1,500 pounds. Only about 5 inches separate the street and the roof of the New York Central railroad tunnel."

Smithson Trash Receptacles



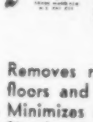
16 years of research and engineering have produced the world's most useful and most beautiful Trash Receptacle.

- LOW COST OF MAINTENANCE
- NO PAINTING
- FACTORY SUPPLY OF SPARE PARTS
- SMOTHERS FIRES
- MADE OF ALUMINUM
- NO CORROSION

Write today for more reasons why the City of Los Angeles purchased 577 of these units.

SMITHSON COMPANY
219 So. Mednik Ave., Los Angeles 22, Calif.

FOR CLEAN, SAFE
SHOWER ROOMS AND SWIMMING POOLS



"Bull Frog"
SAF-T-KLENZ

Removes rust stains, lime deposits, soap oil, body grease, algae formation leaving floors and decks practically slip-proof.
Minimizes conditions that breed and spread infectious germs.
Simply sprinkle Saf-T-Klenz on damp surface, scrub or mop lightly, and flush with water.

WRITE TODAY FOR LIBERAL FREE SAMPLE!
BERMAN CHEMICAL CO., 715 SUPERIOR ST., TOLEDO 4, OHIO

ZONEMARK
THE INTERNATIONAL TRAFFIC PAINT

This four-lane southbound artery in Baltimore orderly channels traffic with Zonemark.

5 yardsticks to measure the value of "ZONEMARK"

1 QUICK DRYING
May be driven over without pickup in 15 to 30 minutes according to weather conditions.

2 WEARS LONGER—BY TEST
Your own records will prove that Zonemark outwears other paints.

3 GOES FARTHER—BY TEST
Impartial tests prove Zonemark has 10% to 30% greater coverage.

4 COVERS WITH ONE COAT
One coat covers the darkest surface with a clear-cut opaque film.

5 DAY AND NIGHT VISIBILITY
Correct surface finish assures greatest visibility by night or day.

no other traffic paint has ALL these advantages

Available in
White • Medium Yellow
Orange • Bright Red • Black

ZONEMARK
THE INTERNATIONAL TRAFFIC PAINT
Made Exclusively By
HANLINE BROS.
Paint Makers
BALTIMORE 30, MARYLAND

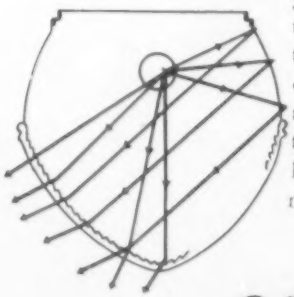
HERE'S THE NEWEST

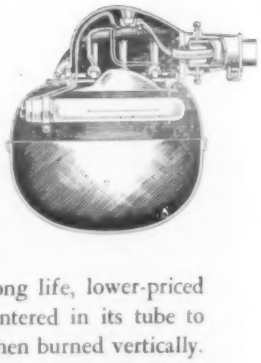
in Mercury Street Lighting

A revolutionary Luminaire with New principle that controls glare

Here is a brand new luminaire—that introduces a brand new approach to light control. Designated as G-E Form 109, it has been designed primarily for burning mercury lamps in traffic-artery lighting—where high visibility, high utilization efficiency—and maximum driver comfort—are important.

With this luminaire, the light source is well up in the reflector, completely shielded from drivers. The light, directed downward in an asymmetric pattern by the ovate reflector, is then *lifted* by the prismatic refractor—to give a sharp, accurate cut-off at 20 degrees below the horizontal on the street side, 25 degrees on the driver-approach side. The entire globe is uniformly illuminated so that brightness is relatively low. Glare is held to the lowest levels ever achieved in mercury lighting—with practically *all* light placed where it is needed for best visibility.





Burns *either* FH-1 or EH-1 lamps *horizontally*

The new Form 109 can be used with *either* the 16,000-lumen FH-1 or 21,000-lumen EH-1 mercury lamp and also can be used with large filament lamps. Both mercury lamps are burned horizontally. The arc of the long life, lower-priced FH-1 lamp is magnetically centered in its tube to assure the same lamp life as when burned vertically.

We believe that this new luminaire is one of the most significant forward steps in street lighting since we introduced mercury lighting 13 years ago. You'll want Bulletin GEA-5142, which gives further information. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

GENERAL ELECTRIC

452-79

Municipalities Cooperate in Solving Common Problems

THE first attempt to cross county lines in regional planning in the State of New Jersey has been taken with the establishment of the Passaic-Bergen Community Planning Association, Inc., an unofficial civic organization which will serve the municipalities of Clifton, Garfield, Lodi, Passaic, and Wallington.

The brochure describing the aims of the new Association points out that the municipalities thus far involved are interlocked by common transportation, industrial, commercial, and cultural interests, and that they are in many ways one integrated community. It declares that despite the area's assets, "it is apparent that there are increasing liabilities which, if allowed to continue to grow, will gradually cause industry to seek other fields and which certainly will deter new industries from settling here."

The brochure explains that solving the liabilities and potential liabilities of the area is complicated because the area's development has spread with little relation to city or town boundaries, and it has become difficult for public officials to take action, since, even assuming a desire to do something, an official realizes he can do little within his own bailiwick. This situation is also of great concern to business and industry since its own plans must be related to those of the community in which it is located, according to the brochure.

The new Association will take the leadership in preparing studies and plans for the area upon which action will be urged. It is expected that additional municipalities will be invited to participate in its work in the future. Executive secretary is Robert Burlingham, with headquarters in Passaic, N. J.

Northern Westchester Towns Also Band Together

Northern Westchester County, N. Y., is another area where municipalities have recently banded together to coordinate their planning programs. Five towns and one village have entered into a three-year agreement to retain a staff of planning technicians who will be immediately concerned with zoning, new subdivisions, master plans, highways and airports. Parties to the agreement are the towns of North Castle, Bedford, Poundridge, Lewisboro, and Somers, and the Village of Mount Kisco. The technicians will work under the supervision of town planning boards, with the Westchester County Department of Planning, Hugh R. Pomeroy, Director, serving as both adviser and fiscal agent.

The master plans of some of the communities involved are 20 years old, according to Mr. Pomeroy. Although zoning ordinances are in effect in all of the municipalities, they have been largely unrelated. The new planning program will work toward the coordination of zoning restrictions to avoid the mushrooming of small houses in isolated areas where the cost of providing public services is exorbitant.

Governor Dewey for Realistic Federal Aid To Housing

FROM Governor Thomas E. Dewey's address on October 8, at the groundbreaking ceremonies for the Governor Alfred E. Smith Houses on Manhattan's lower East Side:

"The Federal Government must encourage the revisions and modernization of building codes throughout the nation. We must revise them so as to make use of the thousands of technical advances which have been made in housing construction. The provisions of research in the housing bill passed by the Eightieth Congress is an important step in that direction.

"We must work toward stability in the field of housing construction. The Federal Government must stand ready to lend a hand to the states to encourage programs of community improvement and development. When federal aid is required to get action, then that aid must be provided on a realistic, practical basis."

ICE AND SNOW CONTROL

CHEMICAL SPREADER

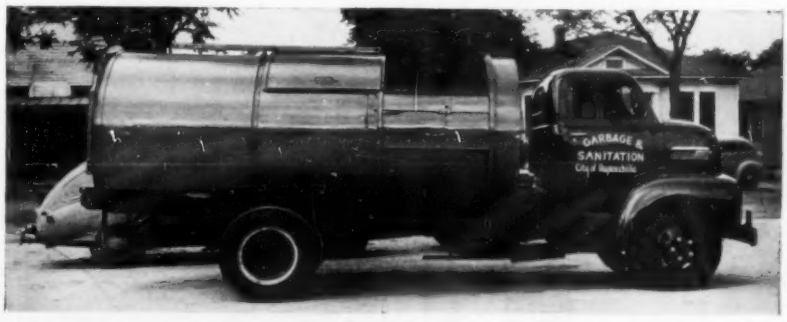
Clear chemicals are *cheap* and *effective* when applied with a "Scotchman". Used on dump trucks or pick-ups. Removable in three minutes. Bagged or bulk materials. Filtered air cools enclosed engine. Pushbutton starting and lights. Accurate control of application rate saves material. Instant control of width and direction of spread. Self-leveling. Stainless steel.

TARRANT MFG. CO.
East Avenue Saratoga Springs, N. Y.

SPEED UP GARBAGE COLLECTION
with PAK-MOR Garbage Disposal Units

Extra Capacity—approximately 18 cubic yards
Speedier Loading—a simple manual operation opens doors downwards and sideways
Quicker Unloading—entire capacity in one-half minute or less
Fewer Working Parts—Less need for repair and replacement
Covered Unit—all-enclosed steel body
Longer Life—all-welded construction

A Pak-Mor with loading doors wide open.



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ALAMO WELDING & BOILER WORKS
812 N. Flores St. San Antonio 1, Texas

THE *Harder* THE HAUL
THE *Better* THEY LIKE IT

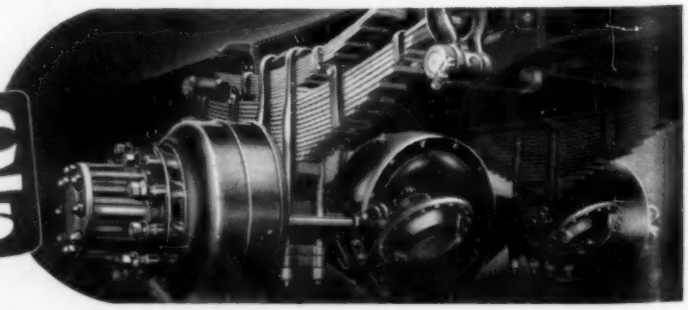
Pulling heavy loads over the passes of the Continental Divide, where elevations often exceed 11,000 feet, is all in a day's work for heavy duty GMCs like the giant Diesel pictured above.

GMC heavy duties have big, dependable valve-in-head gasoline engines in four sizes . . . powerful pulling GM Diesels in 4-cylinder and 6-cylinder types. They have thick-beamed, heavy-geared axles. And they have frames, clutches, transmissions and brakes that combine with these engines and axles to provide trucks for every type of transport job . . . over-the-road or off-the-highway . . . in weight ratings up to 90,000 pounds.

From every heavy hauling angle . . . economy, dependability and long life . . . your best truck buy is a big, heavy duty GMC.

GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION

GMC heavy duty trucks are all-truck designed and all-truck engineered in every part and feature. This rear axle, spring and brake assembly, used on a 750 series Diesel, is typical of the all-over rugged construction that enables GMCs to haul big pay-loads for long periods at low cost.



THE TRUCK OF VALUE

GMC TRUCKS

GASOLINE • DIESEL

News and Illustrations

Items of interest to city, town and county officials and others concerned with the economical construction and efficient operation of public improvement undertakings

New Small Shovel Shows Big Performance

The Dempster Diggster.

Mobility and big-shovel performance are combined in the new shovel unit, the Dempster Diggster, manufactured by Dempster Brothers, Inc., 8118 Dempster Bldg., Knoxville 17, Tenn.

In municipal operations, the shovel appears particularly well suited for use in connection with sanitary-fill excavations, although it is equally useful for any general excavation, where the machine works to advantage at the excavated level. Another useful municipal application is in street excavations for pavement construction. The shovel will dig 15 inches below grade and will lift the excavated material 10½ feet. It is mounted on rubber tires and does the digging by the use of hydraulic controls rather than by forcing the shovel with the shovel wheels.

The shovel can travel at truck speeds. Dual steering wheels add stability and give the shovel a 10½-foot turning circle. The manufacturer states that the unit can make a complete circle in 5 seconds.

United Laboratories Announce Concrete Repair Product

A new product for high-speed repair of concrete floors has been announced by United Laboratories, Inc., 16801 Euclid Ave., Cleveland 12, Ohio. Known as Tampatch, the new development is applied to broken, rough, or uneven concrete surfaces, interior or exterior.

One of the outstanding claims of the new product is its ability to withstand heavy traffic loads. The floor may be placed in service immediately after the repairs have been made; traffic over the area soon smooths out the repair section by a compressing action

The product is delivered in ready-mixed form, ready for use.

Hamilton-Thomas Corp. Formed as Operating Company

The Hamilton-Thomas Corp., Hamilton, Ohio, has been formed to operate Economy Pumps, Inc., Klipfel Mfg. Co., and Liberty Planers, Inc., manufacturing divisions of Hamilton-Thomas.

Officers of the corporation are Richard Thomas, president; L. G. Thomas, executive vice-president; H. R. Ryan, vice-president; R. H. Thomas, Jr., vice-president; E. T. Drinkuth, secretary; and L. V. Thomas, treasurer.

Economy pumps manufactures centrifugal, axial-flow, and mixed-flow pumps in sizes up to 150,000 gpm. Liberty Planers makes machine tools and double-housing, open-side, frog-and-switch, and die-block planers. Klipfel produces automatic regulating valves, pump governors, and pressure reducing, float-and-lever, thermostat, back-pressure and relief valves.

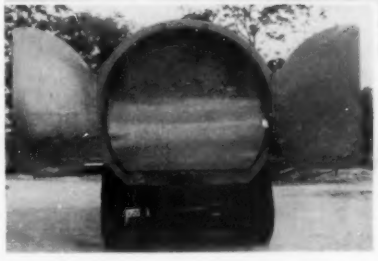
Speed Up Garbage Collection and Disposal

The Pak-Mor garbage-disposal unit, operated from the cab by using a winch, has a capacity of about 18 cubic yards of compressed garbage. Speedy loading is achieved by means of doors on the front third of the body that slide open downwards and sideways, allowing the whole open space to be used for loading. The opening can be adjusted to different positions—entirely or partially open—depending on the quantity of the garbage already in the unit.

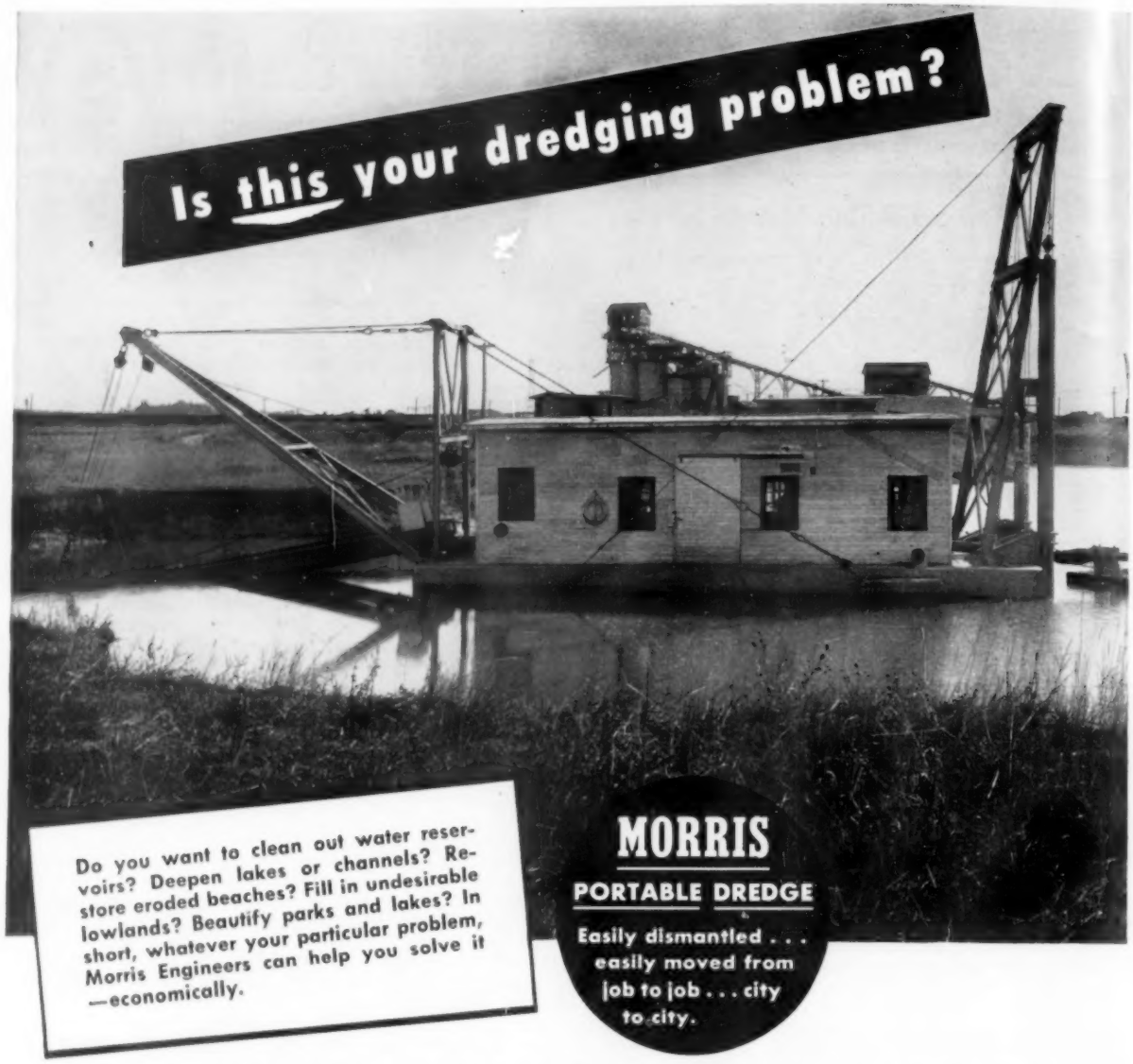
The entire contents in the Pak-Mor, made by the Alamo Welding & Boiler Works, San Antonio, Texas, can be emptied in one-half minute or less: the garbage is pushed out through the rear doors by the packer-plate action; no hydraulic cylinder is required. Protection against offensive garbage odors is provided for by the all-enclosed steel body.

Specification of the Pak-Mor are: length, 13 feet 11 inches; height, 68 inches; width of intake doors, 3 feet 6 inches. The unit is recommended for any 1½-ton C. O. E truck chassis of 158-inch wheelbase.

The loading doors are open: note that the entire top and sides on the front third of the body are open for the reception of garbage.



The rear doors are open and the packer plate is in the position it would be after pushing out the garbage load.


Is this your dredging problem?
Do you want to clean out water reservoirs? Deepen lakes or channels? Restore eroded beaches? Fill in undesirable lowlands? Beautify parks and lakes? In short, whatever your particular problem, Morris Engineers can help you solve it —economically.
MORRIS
PORTABLE DREDGE
Easily dismantled . . . easily moved from job to job . . . city to city.

. . . Every Morris Dredge is Individually designed for your particular needs

In this way—and this way alone—you can be sure that the dredge will do the job it's meant for—dependably, efficiently, economically. For every engineer knows that the main cause of pump and dredge failure is to use it for a job for which it was never intended or designed.

This is why Morris builds your dredge from scratch . . . to fit your definite requirements. We study your problem . . . design the dredge . . . build it complete with either electric, Diesel or gasoline power . . . with portable or permanent hull . . . rigging, hoist, spuds, ladder, ladder head and cutter . . . and then install it with all necessary piping and fittings.

What's more, we furnish an operator for an initial period of time until your own operator learns how to operate and maintain the dredge.

WRITE TODAY for full information about Morris Dredges. Ask for Bulletin 177.

MORRIS MACHINE WORKS • Baldwinsville, N. Y.
Sales Offices in Principal Cities

MORRIS *Centrifugal Pumps*

Rice Promoted by Calgon

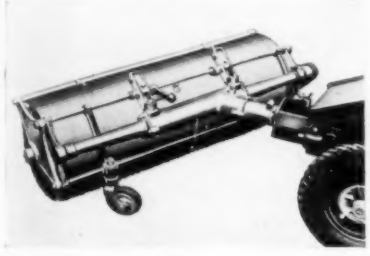
Owen Rice, former manager of the Calgon Threshold Dept., has been elected vice-president in charge of commercial chemical sales by Calgon, Inc., Pittsburgh, Pa., a subsidiary of the Hagan Corp.

Owen Rice

Mr. Rice joined another Hagan subsidiary, Hall Laboratories, Inc., in 1937, as a research engineer with the special assignment of developing threshold treatment — the process of effectively correcting the effect of troublesome minerals in process and cooling water by means of a few ppm of Calgon.

The Gravely Power Brush Sweeps Away Light Snows

Most snows are light, and the heavy snows can be made light by frequent cleaning during the snow fall. An ideal tool for sweeping walks and driveways around municipal buildings, the Gravely power brush may also be used



for sweeping coal dust, rain water, or mud, and during the warm seasons, for brushing lawns to invigorate the grass growth while sweeping leaves and grass into windrows.

The power brush is 30 inches long, 48 inches wide, and has a sweeping width of 38 inches; it has separate clutches to control the rotary motion of the power brush and the motion of the tractor; it is easily adjustable as to height or regulated for sweeping contact; a single lever lifts the power brush from contact level for transportation purposes, and the brush segments are replaceable and reversible on the carrying shaft.

Electric Transit In New England

New England readers desiring information on the latest trolley-coach operations will now apply to the Ohio Brass Co., 620 Boston Chamber of Commerce Bldg., 80 Federal St., Boston, Mass. The company has moved up from 49 Federal Street. Telephone is Hancock 6-7153; Lindsay Ellms is district manager.

THE SENSATIONAL HYDROCRANE
Handles Jobs No Other Crane Can Touch!

COMPLETELY HYDRAULIC

TELESCOPIC BOOM
Extends and retracts maximum load under hydraulic power at any boom angle.

BOOM HOIST
Boom raises and lowers hydraulically.

HOIST LINE
Load is raised or lowered hydraulically — no foot brakes.

SETS OUTRIGGERS
Outriggers are extended or retracted hydraulically in a matter of seconds.

REVOLVES 370°
Swings in either direction under hydraulic power.

CLAMSHELL BUCKET
Hydraulic ram within the bucket itself gives tremendous digging power.

You've never seen anything like it — a truck crane that's completely hydraulic, that telescopes its boom, raises and lowers the boom, hoists, revolves and sets its outriggers without the operator leaving his seat.

It's a remarkable crane, so simple a child can run it — thousands of conventional parts have been eliminated. There are no gears, no drums, no clutches, no brakes, no chains, no sprockets — only one engine powers the truck and crane.

A simple, dependable, high pressure hydraulic system operates the entire unit — provides positive, safe, precise control no other crane can match.

The Hydrocrane is available complete, mounted on a new motor truck as a clamshell, crane, or magnet in two or three ton capacities. Before you buy any crane — check the Hydrocrane — send for complete details today.

3H48

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7923 W. GREENFIELD AVE., MILWAUKEE, WIS.

Mail Coupon today to

BUCYRUS-ERIE, HYDROCRANE DIV.
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Please send me additional information on the Hydrocrane
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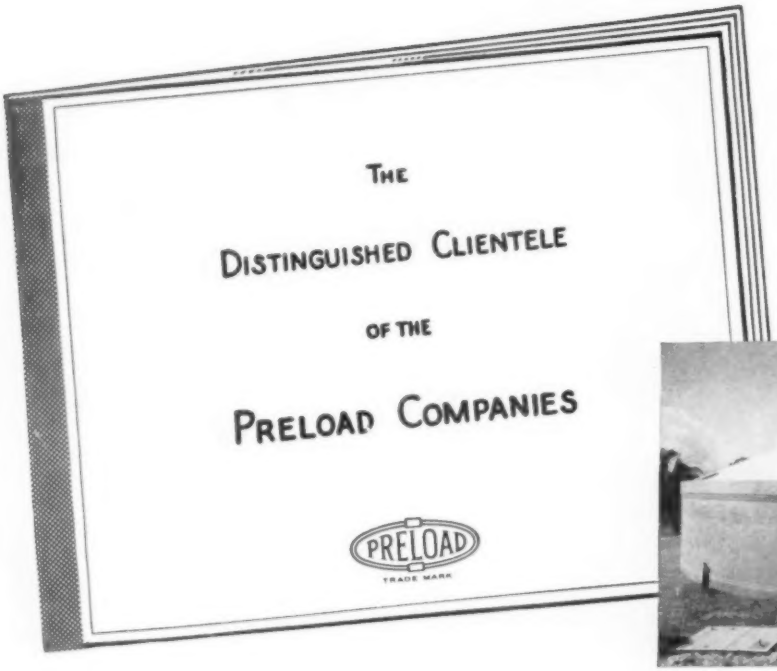
Completely — NEW — DIFFERENT — HYDRAULIC



PRELOAD PRESTRESSED TANKS

This publication, which will be sent upon request, is a useful factual record of the wide range of application of Preload Circular Prestressed Concrete Structures. It is a partial list of some 500 tanks built for 80 clients, including some of the largest industrial organizations and the most progressive municipalities, in widely varying geographic locations and climatic conditions.

Long the pioneers in prestressed concrete construction, Preload has amassed a wealth of experience which is at your service, together with the engineering and construction facilities of our organization. Many of the industrial organizations and municipalities who have used Preload prestressed circular concrete structures have again and again called upon our services with repeat orders during the period covered by this report.

Preload Prestressed Concrete Tanks, utilizing Preload Wire Prestressing, are available *now* using local labor and materials. No waiting — construction can start in several weeks — completion in several months. With no exposed metallic surfaces and dense Gunite construction, Preload tanks have a long record of "low-maintenance-cost-service" under an extreme range of weather conditions.

Send for tank data and our brochure "The Distinguished Clientele of The Preload Companies"

THE PRELOAD COMPANIES

209-11 EAST 37th STREET, NEW YORK 16, N. Y.

Designers and Builders of Prestressed Concrete Storage Tanks and Pressure Pipe
Prestressed Concrete Bridges and Cement Lining of Pipe in Place

The Preload Corporation
New York—Boston—Washington

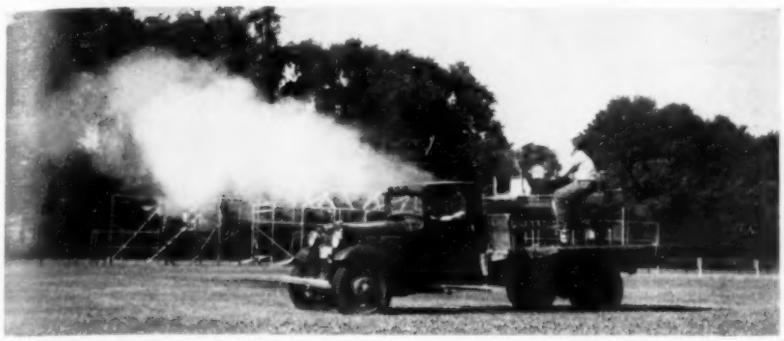
The Preload Central Corporation
929 Porter Bldg., Kansas City, Mo.

PRELOAD
TRADE MARK

The Preload Pacific Corporation
333 Kearney St., San Francisco

The Preload Co. of Canada, Ltd.
7325 Decarie St., Montreal, Que.

Insects Can Be Controlled With a Sprayer and Duster



The Buffalo Turbine sprayer-duster uses air to atomize and project sprays or dusts, and the equipment will cover 10 acres or more in an hour. Adjustable to provide the desired degree of agitation to foliage receiving treatment, the unit may be used for forest, shade-trees, orchard, row-crop, weed, and mosquito- and fly-control work.

Using air provided by an axial flow blower as the carrier for the insecticides or fungicides, the equipment has a flow which can be varied from a gentle breeze to a velocity of 250 miles per hour. Insecticides and fungicides may be distributed as a liquid, dust, or a combination.

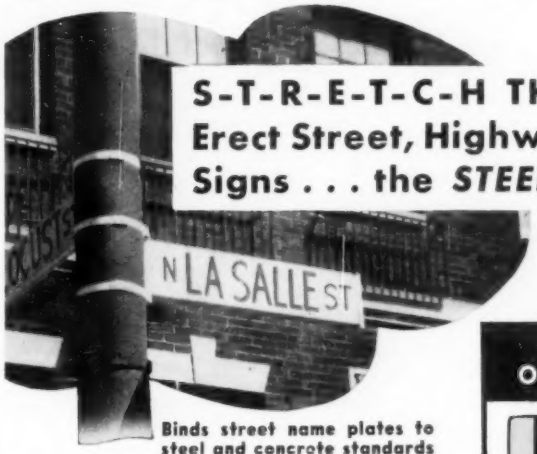
In still-air tests, this blower gave a definite and even distribution of spray for a distance of over 125 feet when operated at 3,800 rpm. The pattern of spray spread out to about 20 feet at a distance of 100 feet from the nozzle. The tops of the tallest street trees were reached without difficulty. Spraying from roadsides, an adequate coverage was secured to a depth of 250 feet from the nozzle. When a 6-mile wind was blowing, the coverage extended to a distance of 300 to 450 feet, depending upon the density of the canopy. When operating at 3,800 rpm, the spray-particle size varied from 50 to 150 microns.

Manufactured by the Buffalo Turbine Agricultural Equipment Co., Inc., Gowanda, N. Y., the machine is available in three basic types. Type No. 1 is a skid model usable from a truck and consists of the blower with necessary power unit, liquid tank, and dust bin with necessary accessories mounted upon a heavy welded frame. (Any Type No. 1 unit may also be mounted on a turntable.) Type No. 2 consists of the same unit described above with the addition of a two-wheel adjustable trailer which can be trailed behind a tractor, truck, automobile, or jeep. Type No. 3 has been adapted to the post-war jeep and is powered from the rear power take-off.

A Public Health Aid For Analytical Studies

In the laboratories of many well-equipped public health agencies the Klett Electrophoresis apparatus is playing an increasingly useful part. It is particularly well adapted to the study of normal and pathological blood sera; immune sera and antibodies; virus proteins, hormones, enzymes, etc.

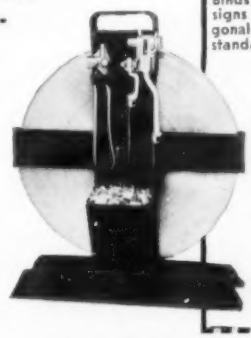
The Electrophoresis apparatus allows the study of colloid particles by the *moving-boundary method*, as distinct from the microscopic examination of separate particles. The moving-boundary method has the advantage over the microscopic method that it yields valuable information concerning the homogeneity and composition of biologically important materials. It furthermore makes possible the separation and isolation of individual components of such systems. The apparatus is manufactured by the Klett Mfg. Co., 179 East 87th St., New York 28, N. Y.



Binds street name plates to steel and concrete standards

S-T-R-E-T-C-H THAT BUDGET! Erect Street, Highway and Traffic Signs . . . the *STEELBINDER* Way

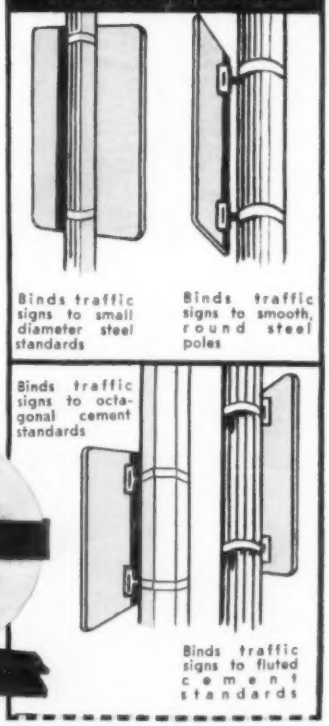
COST drops, signs look trim and stay put when erected with a Steelbinder Tool and stout, corrosion resistant strap. Maintenance men like the easy way Steelbinders strap on the sign, even in cold weather, and the work saved when the sign is removed. Cement or steel standard, round, square, or irregular shape, plain or fluted surface, the Steelbinder method provides a permanent, trim looking sign mounting, saves work and material, and eases the strain on your budget dollar.



COMPLETE PORTABLE STRAPPING OUTFIT

Light enough to carry. Includes Steelbinder Strapping Tool, Strapping, Hammer Cutter, and supply of seals.

HOLDS FAST ON ANY SURFACE



Binds traffic signs to small diameter steel standards

Binds traffic signs to smooth, round steel poles

Binds traffic signs to octagonal cement standards

Binds traffic signs to fluted cement standards

STEEL STRAPPING

Write Today for Booklet No. SSM-3, "Street, Highway and Traffic Signs."

A. J. Gerrard & Co.

221-Y N. LaSalle St., Chicago 1, Ill.

VISIT BOOTH No. 518 NATIONAL MATERIALS HANDLING SHOW PHILADELPHIA · JAN 10-14, 1949

Mechanized

ACCOUNTING

FOR YOUR CITY

. . . with Remington Rand Punched Cards!

Here's a *practical* way to fully mechanize your city's accounting. To prepare important accounting records . . . easily, accurately, *within legal deadlines.*

With Remington Rand punched cards—like the one shown here—you can have complete control over all phases of municipal accounting and statistics, such as: *Budgets* • *Taxes* • *Payrolls* • *Costs* *Utilities* • *Public Property* • *Public Works* • *Police* • *Welfare* • *Institutions.*

Machines organize the facts precisely . . . and print them in a form that is easy to read, easy to understand. *You* concentrate on making decisions.

For information and assistance to improve *your* record-keeping procedures, call our nearest branch office or write Tabulating Machines Division, 315 Fourth Ave., New York 10.

FREE BOOKLET

Let us send you "Complete Tax Accounting," which describes one of the important jobs punched cards can do for you.

WRITE TODAY!

1873 THE FIRST TYPEWRITER 1948 — 75TH ANNIVERSARY — REMINGTON RAND INC.

Remington Rand

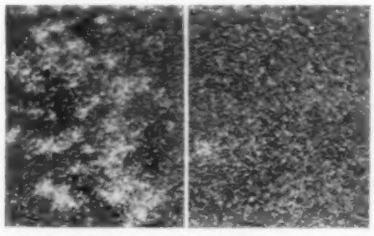
FOR 40 YEARS—PUNCHED-CARD PACEMAKER

Automatic Crossing Signal Holds That Bear

Ruby, who participates in the only trained black bear act in the country with the Burlington, Great Northern, and Northern Pacific lines rodeo, couldn't get hurt if she wanted to. This railroad crossing is protected by a Model 10 Automatic crossing signal manufactured by the Western Railroad Supply Co., Chicago 8, Ill. This company has an enviable record of no fatalities on crossings protected by their signals.

Turf Fungicide For Good Looking Lawns

One of the problems facing superintendents of parks and municipal grounds is the prevention and control of dollar spot, a turf fungus appearing in small brown spots about the size of a silver dollar. A new product known as CRAG Turf Fungicide now solves this and other grass-disease problems, such as damping off of seedlings, snow mold, green scum, and pink patch. This same product also aids the control of large brown patch.



Untreated bent-grass plot at left shows advanced case of *dollar spot*. Section at right, treated with CRAG turf fungicide, shows no sign of disease.

CRAG turf fungicide, formerly known as experimental fungicide 531, is a chemical compound containing cadmium, copper, zinc, calcium, sulfur, and chromium. It is manufactured by Carbide and Carbon Chemicals Corp., 30 East 42nd St., New York 17, N. Y., specifically for control of these troublesome turf diseases. The fungicide may be used as a dust mixed with top dressing or sand, or as a spray with a minimum amount of water, for this chemical is non-corrosive; in fact, it acts as an anti-rust agent.

THE MODERN LAWN MOWER SHARPENER

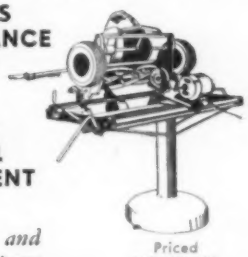
CUTS MAINTENANCE COSTS

•

LOWER CAPITAL INVESTMENT

•

Economically and Quickly Sharpens All Municipal Mowers



Priced $241.50 (less motor)

Sharpens All Reel Type Mowers • Hand, Power or Gang • 10 to 20 Minutes • No Dismantling No Extra Attachments Needed

All reel type mowers, from 5-inch edgers to 36-inch power mowers, are quickly sharpened to extreme ends of both left and right twist reel blades. Handle, wheels, roller and motor remain in place when sharpening is in process. Bed knife is sharpened in same brackets that hold mower in grinding position. No extra attachments required. One lever puts mower or bed knife in grinding position. 100% steel construction. Grinding head rides on five ball bearing races. Small, compact, easy to operate. Sharpens wood chisels, joiner knives and planer blades without extra attachments. Skate Sharpener Attachments available.

1/3-hp. G.E. 60-cycle Motors now available—$21.50 extra.

Send for Free Bulletin No. 258

ORDER NOW • IMMEDIATE DELIVERY

MODERN MFG. CO.

160 N. FAIR OAKS AVE. • PASADENA 1, CALIF.

PAYS FOR ITSELF THE FIRST MILE

DOTMAR MECHANICAL CURB & GUTTER PAVER

LAYS ANY SPECIFIED CURB SHAPE

Shift your curb paving into "high" with a DOTMAR MECHANICAL CURB AND GUTTER PAVER. With as few as 300 men an you can lay more than 300 feet an hour, 2,400 a day . . . lay it to any shape or cross section called for . . . lay curves, (100 ft. min. rad.) . . . grades up to 20%. Eliminates face forms and division plates. Slight alterations in division plates permit their use when specified. Any standard concrete mix from 1¼" down works perfectly. Low slump gives concrete economy. Excellent trowelling finish assures you little or no touch-up. Write for data Bulletin 48.

FIVE LINEAL FEET PER MINUTE *Minimum*

Dotmar INDUSTRIES Inc.

511 HANSELMAN BLDG. KALAMAZOO 1, MICH.

FREE

Exclusive Hotpoint Data

Showing the Effect of Modern Garbage Disposal Units on Existing Sewage Systems and Plants!

NOW Hotpoint makes available to all Public Works Engineers and city sanitation officials exclusive information about modern food waste disposers and their effect on city sewers, sewage systems and treatment plants. This information is free.

»» Compiled after months of exhaustive scientific research, these data were collected by Hotpoint engineers working in co-operation with public sanitation experts in many parts of the country and under varying conditions of climate and facilities.

»» Their findings clearly show that certain household food waste disposers like Hotpoint's own Disposall® in no way impede the normal flow of sewage through existing systems and do not hamper in any way the smooth operation of sewage treatment plants. In fact, evidence shows that in many instances the installation of modern garbage disposal units has actually helped the operation of sewage systems because of the scouring effect of finely ground food waste and congealed grease particles.

»» For the full report on this important sanitation subject, mail coupon below to Hotpoint Inc. *(A General Electric Affiliate)* 5600 W. Taylor Street, Chicago 44, Illinois.

Everybody's Pointing to

Hotpoint

AUTOMATIC ELECTRIC

Disposalls

MAIL COUPON TODAY

Hotpoint Inc.
5600 W. Taylor Street
Chicago 44, Illinois

Gentlemen: Please send me without obligation your report on modern household garbage disposal units and their effect on city sewage systems and treatment plants.

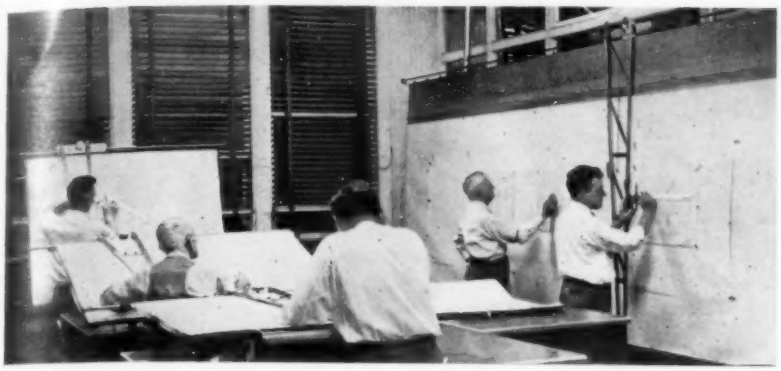
NAME_____

DEPARTMENT_____ POSITION_____

CITY_____ ZONE____ STATE_____

AC

Save Up to 50% in Drafting-Labor Time



The Emmert Mfg. Co., Waynesboro, Pa., manufactures stainless steel drafting machines which the company claims will save up to 50% in drafting-labor time and cost. The mechanism operates on any size or make drawing board.

Indexing of angles is done through the use of the micromatic quadrant, which allows the indexing of every 3 degrees by flipping the quadrant minute-adjusting screw into the desired degree of setting. Adjustments as fine as 2½ minutes are made by a turn of the minute-adjusting screw.

Emmert drafting machines are manufactured for boards 24, 30, 36, 42, 48, 54, 60, 72, 84, 93, 108, 120, and 132 inches by any length; special sizes and left-handed machines can be furnished, as well as vertical counterbalanced full-size units up to 11 feet high, draftsman's desk units, and horizontal-vertical counterbalanced adjustable board units.

Citywide Signs Mark Leavenworth's Streets

To the Editor of THE AMERICAN CITY:

On deciding to install new street-name signs throughout the City of Leavenworth, Kans., we awarded contracts to the Miro-Flex Company of Wichita. The signs were delivered within 90 days of order. There are 606 installations, and since each installation is a four-way affair there are four separate signs at each intersection, a total of over 2,400 pieces. The signs are 18, 24, and 36 inches long, depending upon the length of the name of the street.

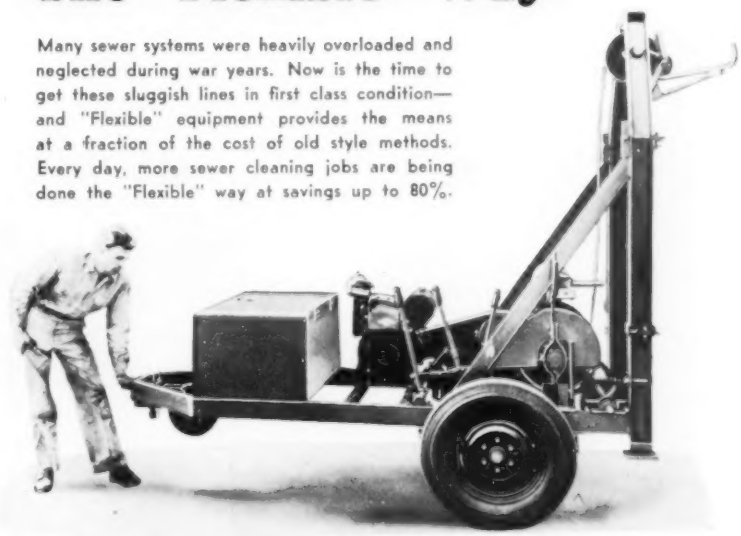
Four-inch letters were embossed on the 6-inch panels of 18-gauge galvanized and bonderized steel. The colors were black letters on a white background, baked enamel, non-reflectorized. Fifty-three of the installations were made on 2-inch galvanized pipe (most of which we purchased locally), and 553 on wooden poles. The pipe installations were set 2 feet in concrete in an 8-inch hole about 8 feet out of the ground. The markers were held by aluminum castings. The installations on the wooden poles were by band and clip. Where the poles were set at an angle, widening or tightening of the clip permitted the signs to be set horizontally. The majority of the poles were utility poles.

Nothing here in years has caused so much favorable comment. These installations were the first thorough coverage of the city by street-name signs. One installation was made at each street intersection. Our problem was to cover as much of the city as possible, or to do half of the city with a more expensive sign. With care these will last a long time. We have some extra signs on the main thoroughfare where we anticipate they may be broken. The whole job was done on an appropriation of $5,000.

Sincerely,
ARTHUR M. MURPHY
Commissioner of Waterworks and Street Lighting

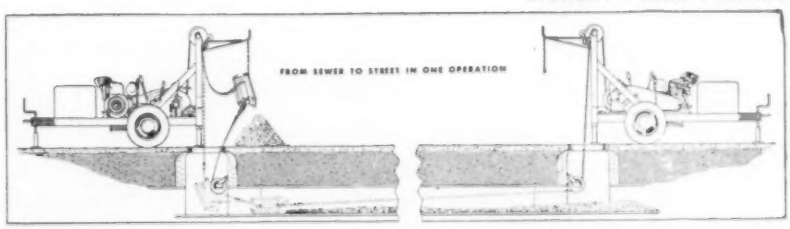
"FLEXIBLE"
POWER BUCKET MACHINES
Clean Sewers The "Flexible" Way

Many sewer systems were heavily overloaded and neglected during war years. Now is the time to get these sluggish lines in first class condition—and "Flexible" equipment provides the means at a fraction of the cost of old style methods. Every day, more sewer cleaning jobs are being done the "Flexible" way at savings up to 80%.



FLEXIBLE POWER BUCKET MACHINE

POWER — DEPENDABLE OPERATION — SPEED — SAFETY — ECONOMY — LONG WORK LIFE



FLEXIBLE SEWER-ROD EQUIPMENT CO.

9059 Venice Blvd., Los Angeles 34, California

141 W. Jackson Blvd., Chicago, Ill. — 401 Broadway, New York 13 — 147 Hillside Ter., Irvington, N. J. — P. O. Box 165, Atlanta — 2011 Central Ave., Memphis, Tenn.

801 E. Excelsoir Blvd., Hopkins, Minn. — 29 Cerdan Ave., Roslindale 31, Mass. — P. O. Box 447, Lancaster, Texas — 41 Greenway St., Hamden, Conn.

3786 Durango Ave., Los Angeles 34, Calif. — 909 N. Homewood Ave., Pittsburgh 8, Pa. — 4455 S.E. 24th Ave., Portland 2, Ore.

Gentlemen:

Idlewild Addition in University Park is a beautiful section of Dallas where homes were built for children, where father mows the lawn in his shorts and mother belongs to a garden club. Everything was well kept except the alleys. In 1945 Le Bonnet Bleu Garden Club, composed of members in Idlewild Addition chose "Beautification of Their Alleys" for their civic project.

Their Alleys" for their civic project.

The city officials told us "The only way you can get out of the black mud and have better drainage is to pave the alleys with concrete. It would also save the taxpayer money spent for repair and tires on garbage trucks." Portland cement concrete was heartily agreed upon as the acceptable surfacing for permanence and durability.

Club members and non-members readily signed

To interest everyone in the beautification project, prizes were offered for the prettiest and best kept alley. The contest ended in great triumph. It has not only enhanced the value of our property but our children have taken over the clean, traffic-free alleys for a playground.

Yours for cleaner and better kept alleys the nation over,

Most sincerely

Mrs Don M Caphton

Mrs. Don M. Caphton

4111 Hanover Street
Dallas 5, Texas

CONCRETE ALLEYS

...mighty popular with taxpayers

When the Garden Club of Idlewild Addition to University Park, in Dallas, Texas, chose the beautification of local alleys as its civic project, members found property owners enthusiastic. As Mrs. Don M. Caphton, the civic chairman, outlines in her letter reproduced above, it was no time at all until all the alleys in Idlewild Addition—except those in four business blocks—were paved with concrete.

After getting the whole community "out of the black mud" these concrete alleys led to many special landscaping projects and beautification contests, thereby furthering the widespread interest in alley improvement.

A concrete alley cleans up the whole block. It ends the dangerous filth that collects and multiplies in unpaved alleys and eliminates breeding places for disease-carrying insects.

Concrete alleys promote the well-being of the entire community and increase property values —usually far beyond the cost of the paving itself. Write for free illustrated folder on alley paving. Distributed only in U. S. and Canada.

PORTLAND CEMENT ASSOCIATION

DEPT. 11-4 • 33 W. GRAND AVENUE • CHICAGO 10, ILLINOIS

A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work

Archbold Appointed By General Fire Truck

Ed Archbold has been appointed southwest regional sales manager for The General Fire Truck Co., serving under Stuart Luce, divisional sales manager of The General Detroit Corp., 2270 E. Jefferson Ave., Detroit, Mich., parent organization of The General Fire Truck Co. From headquarters in Dallas, Archbold will cover the states of Texas, Oklahoma, Louisiana, and Arkansas.

Ed Archbold

Mr. Archbold's first assignment will be the job of setting up a sales organization of local men who are personally acquainted with the territory and its requirements, to provide closer cooperation to meet the needs of this section of the country.

General Fire Truck manufactures a complete line of motorized fire-fighting equipment such as pumpers, rescue-squad trucks, hook-and-ladder trucks, and combination trucks designed to cover all phases of fire fighting.

Philip Carey Appoints Smith

Frank J. Smith has been appointed advertising sales promotion manager of the Philip Carey Mfg Co., Cincinnati, Ohio.

Frank J. Smith

Mr. Smith is succeeding Harold D. Bates, who was recently promoted to general merchandise manager.

In January of this year, following several years in the sales and advertising departments of Owens-Corning Fiberglas Corp., Mr. Smith joined the Carey organization.

Scotchman Chemical Spreader Takes the Danger out of Ice

The Tarrant Mfg. Co., Saratoga Springs, N. Y., manufacturers of the Tarco Scotchman chemical spreader, has announced a number of improvements in this mechanism for spreading sodium or calcium chloride in ice and snow removal.

The gasoline air-cooled engine is completely enclosed; air to cool it is drawn in over the engine through a large 2-inch-thick fibre glass filter so no salt dust or moisture can reach the engine.

To provide for fast, easy engine starting, the Scotchman has been equipped with a push-button electric starting system. The height of the spreader has been shortened by 15 inches to facilitate handling of the bulk material directly from the bed of any dump truck, and lights for night operation have been installed.

The Scotchman provides an economical method of stopping skids.

These improvements added to the standard stainless steel construction makes the Scotchman an efficient spreader for applying chemicals in ice and snow removal because it applies salt in a very thin and even layer for maximum amount of material. The machine removes the former limitations to the use of clear salt caused by excessive amounts of salt brine, since with this spreader there never need be an excessive amount of salt brine.

Ample Volume and Power

Designed and built to deliver far more than their ratings, Hardie Sprayers easily meet the severest requirements. You can depend on a Hardie for sustained big volume, high pressure operation necessary to successful spraying of shade and forest trees from the ground. The same Hardie can be used for many other duties in which a lot of liquid under pressure is needed. Hardie High Pressure Sprayers for shade tree service and general public works duty are available in standard and custom built models and in a wide range of sizes up to 80 GPM at 1000 pounds pressure. Write for the new Hardie Catalog.

THE HARDIE MFG. COMPANY

Los Angeles 11, Calif. • Hudson, Mich. • Portland 9, Oregon

Export Dept.—Detroit 26

Canadian Office—Clarence W. Lewis & Son Ltd.—Grimsby, Ont.

• HARDIE •

DEPENDABLE SPRAYERS

KARPARK

MAKES IT SIMPLE

KARPARK never confuses the parker. All that's needed is the easy insertion of a coin. The rest is automatic. There is nothing to forget — no handles to turn, no levers to move. Simple operation is an important reason why KARPARK is so successful in bringing better traffic control and steady satisfying revenue to the city. Write for all the facts.

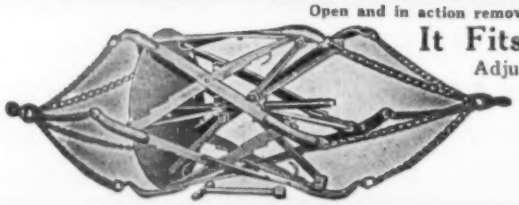
KARPARK
Automatics

KARPARK CORPORATION
CINCINNATI 6, OHIO

THE WISE CHOICE

EXPANDING ROOT CUTTER & SEWER CLEANER

Open and in action removing roots and caked sediment like this.



It Fits in on Every Sewer Cleaning Job

Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

Write for our new catalog on complete sewer cleaning equipment.

EXPANDING SEWER MACHINE COMPANY

108 East Walnut St. **Nappanee, Ind.**

WAR SURPLUS BARGAIN!

Brand New Steel Refuse Cans

Worth at least $15.00

Our Price
1 to 5 $7.00 ea.
6 to 25 $6.50 ea.
26 to 50 $6.00 ea.
51 to 100 $5.50 ea.

F.O.B. Ordill, Ill.

Buy these BRAND NEW galvanized steel refuse cans at a fraction of their original cost. They have many uses—as refuse cans in forest preserves, parks, playgrounds, buildings, etc. and as storage containers for any material or liquid because they're **watertight** and **waterproof.** Tight fitting lid keeps rodents and vermin out of can. Sturdily built to take abuse. Capacity: 64 gal. yet light enough for easy handling. Order your requirements today—they won't last long at this price!

Special price on larger quantities and carload lots. Write for our FREE illustrated circular of WAR SURPLUS BARGAINS.

126-28 S. CLINTON STREET, ROOM 211 CHICAGO 6, ILL.

STREET SIGNS

Mak-A-Sign letter-changing stencils are easy to use, fast, efficient, inexpensive to operate. Makes legible street name on curb, sidewalk, wood or concrete posts, or signboards.

Write for Descriptive Folder and Prices

MAK-A-SIGN CO.

Manufacturers of SIGN MAKING EQUIPMENT
P. O. Box 37 Birmingham 9, Ala.

Lewis and Browning Merge Organizations

On September 15, the Lewis Mfg. Co. and the Browning Mfg. Co., both of San Antonio, Texas, merged their businesses to form the Lewis-Browning Mfg. Co., with offices and factory at 111 Humble Ave., San Antonio 6 (P. O. Box 2707). Officers of the concern include James E. Browning, president, Wilson Lewis, vice-president, H. H. Lewis, secretary, and A. D. Kindig, sales manager.

The new company has to offer the famous line of Pierce Bear Tandem rollers, formerly made by the Lewis Mfg. Co., BMCO pneumatic-tired rollers and sheepsfoot rollers. In the new line of Pierce Bear tandem rollers is featured the extra high frame clearance to allow for rolling next to high curbs. The pneumatic-tired rollers feature independent wheel action to insure equal ground pressure under all tires regardless of uneven ground conditions. The sheepsfoot roller features a center hinge frame which makes for flexibility with greater strength and durability.

Dealer arrangements are being made to consolidate the two lines and some territories are open.

Good Compost

Some virgin sods are rich in fertilizing elements and contain large amounts of organic matter; when broken up and well mixed, perfect vegetation of all kinds produced. If sod well supplied with roots and of a mellow nature could be obtained there would be little to be added for perfect compost; as this is impossibe to obtain, substitutes must be used.

Black soil and some other colors usually indicate the presence of organic matter which in many cases is so broken down that soil particles form crusts which prevent thriving vegetation. In these soils materials must be added to make the compost mellow.

Sand should always be added. However, care must be exercised not to add too much or the soil is left too open and dries out quickly. Organic matter must be added together with sand, as the organic matter fills up the open places and also absorbs water and holds it in the soil.

Compost should be ground, mixed, and used as soon as fermentation has ceased and while the organic matter is still tough and firm. Wichita compost equipment grinds these materials while still tough.

As the mixed pile ferments, it creates friendly bacteria, sprouts weed seed, and holds in the fertilizing ingredients. Grind it often, as the more the ingredients are mixed and exposed to air to ferment uniformly, the less will be needed. A folder, "Fertilizers and Compost," may be obtained from W. W. Grinder Corp., Wichita, Kans.

BARTLETT MFG. CO.

ROAD SIGNS

Automatic Type Tripod standard can be set up instantly. Will not blow over. Folds in a flash for compact carrying. Sturdy construction. 4 Ft. Automatic Type (illustrated) has locking cam for tripod legs, and 18" x 18" metal sign.

Sample stock wordings: "DANGER", "MEN WORKING", "MEN WORKING ABOVE", "MEN WORKING IN TREES", etc.

Write for Catalog No. 30

AVAILABLE NOW

Bartlett tree paint for application to tree wounds.

Also Pruning Saws.

TRADE MARK COMPOUND

BARTLETT MFG. CO.
3003 E. Grand Blvd.
Detroit Michigan

Save Money and Make a Better Patch

Your First Drum of NOSTRIP is our Best Salesman

Now that the Fall and Winter patching season is here—try Nostrip this year! Experience will prove that Nostrip makes bituminous patches hold and last, even under the most adverse weather conditions.

Patch work may even be carried on during the rain, and it is not necessary to dry out chuckholes or to use dry aggregates for stock-pile or patching mix. . . Your first drum of Nostrip is our best salesman. Take advantage of this special offer. Try Nostrip on your next patching job.

The first drum only, to an entirely new customer, will be priced specially to you—$60.00 delivered anywhere in the United States—400 pounds net weight of Nostrip.

Order on your own letterhead or write us.

NOSTRIP DIVISION OF MAGUIRE INDUSTRIES, INC.

122 East 42nd St. New York 17, N. Y.

BOSTON GOES MI-CO

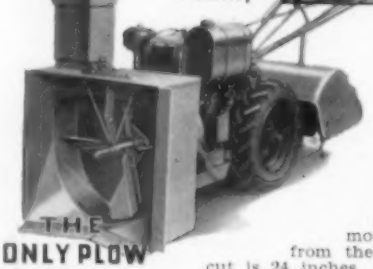
Several months ago, 2000 MI-CO PARKING METERS were placed in operation in Boston. After three months, MI-CO proved to be better, and Boston placed an order for an additional 2000 MI-CO Meters. ¶Before installing any meters, the Boston Traffic Commission conducted an extensive survey of meters installed in various cities. After this survey several makes of meters were subjected to exhaustive laboratory tests by impartial engineers. As a result of these appraisals, Boston selected and installed 2000 MI-CO Meters and 1000 meters of another make for their final, on-the-street tests. During this on-the-street testing period, **maintenance, number of service calls, ease of repair, ruggedness, public reaction, and productiveness of the two meters were compared.** The result—an order for 2000 additional MI-CO Parking Meters. ¶**Here is incontestable proof that MI-CO Parking Meters are engineered and built to give unusual service, with maintenance low and productivity high.** If you are considering metered parking, you must consider MI-CO. We'll be glad to send you all the facts.

MI-CO METERS, 231 Court St., Covington, Ky.
Division of The Michaels Art Bronze Co., Inc.
Representatives Wanted

REMOVE SNOW QUICKLY AND EASILY

ARIENS Tiller SNOW PLOW

NEW Revolutionary ROTARY PLOW!



THE ONLY PLOW THAT REMOVES SNOW FROM ALL AREAS - LARGE AND SMALL

Here's a snow plow that actually removes snow . . . it doesn't push the snow over into another spot, particularly where drifts prevent shoving the snow. You have never seen anything like it for snow removal . . . removes snow up to 18 feet from the path . . . width of cut is 24 inches . . . maximum height of discharge spout 55 inches . . . discharge spout reversible so that snow may be blown to the right or left. Removes snow so quickly and easily that snow removal becomes a pleasure instead of a drudgery. Do in minutes what it takes hours to do otherwise.

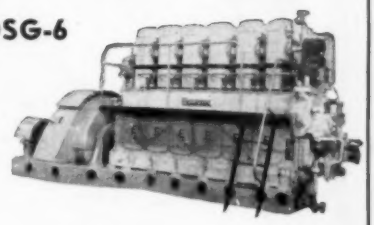
Available with the tiller attachment, or where you have an ARIENS Tiller, this new rotary snow plow can be attached in 20 minutes. Write now for complete details.

ARIENS COMPANY BRILLION WISCONSIN

NEW ENTERPRISE DIESELS

MODEL DSG-6

FOR IMMEDIATE DELIVERY WITH



375 KVA, 300 KW IDEAL ELECTRIC CO. A.C. GENERATORS, 450 RPM

These units are offered at considerably less than the manufacturer's list prices. Write or wire today for complete information about these slow-speed fully-guaranteed Diesel units for your electric power requirements.

DIESEL PLANTS FROM 10 TO 1420 KVA
WHAT ARE YOUR REQUIREMENTS?

AG SCHOONMAKER CO INC.
50 CHURCH STREET NEW YORK 7, NEW YORK

Two-Way Radiotelephone on Police Motorcycles

First cities to receive Motorola engineered 2-way FM radiotelephones for the Harley-Davidson police Servi-Car are the adjoining municipalities of Neenah and Menasha, Wis. Holding the press-to-talk microphone is Joseph Robl, Oshkosh dealer, who points to the louvered control panel as William H. Davidson, the president of the Harley-Davidson Motor Co., Milwaukee 1, Wis., looks on.

Gurley Appoints Dealers

W. and L. E. Gurley, Troy, N. Y., manufacturers of engineering and scientific instruments, has appointed three new dealers: L. L. Ridgway Co., 324 Lafayette St., who will open an additional branch office at 277 Broadway for the display of Gurley equipment; Western Blueprint Co., Kansas City, Mo., and Wray Williams Co., Memphis, Tenn.

Egmont S. Smith Dies

Egmont S. Smith, manager of the Dallas office of the Neptune Meter Co., 50 West 50th St., New York 20, N. Y., died recently after an extended illness.

Active in the Southwest section of the American Water Works Association, and for many years chairman of its Publication Committee, Mr. Smith received the Fuller Award in 1942.

MORSE BOULGER

Two Bests

1 WASTE DISPOSAL BY INCINERATION

2 INCINERATORS BY SPECIALISTS

Select from this list of five different types and you will get the best type for your particular problem whether it is trash, garbage, sewage sludge, institutional organic matter . . . separately or in combination.

★For Garbage and Rubbish

(1) Cell and Hearth
(2) Circular Hearth and Grates—Mechanically Stoked

★For Sewage Sludge Drying and/or Burning

(3) Multiple Zone Furnace—Mechanically Stoked

★For Garbage, Rubbish and Sewage Sludge

(4) Circular Unit, Mechanically Stoked, with Separate Compartment for Sewage Sludge Reduction

★For Garbage and Trash (Individual Buildings)

(5) Kernerators (Flue-Fed and Ready-Built)

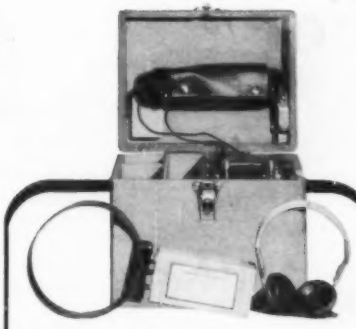
Our incinerator experience goes back nearly sixty years. Our work is guaranteed. Our incinerators are constructed under the supervision of our own field men who stay with it until the unit is in operation, fully broken in and crews instructed.

Foreground—rectangular combustion-mixing chamber; background—cylindrical ignition chamber; Morse Boulger Mechanically Stoked Incinerator, Sydney, Ohio

MORSE BOULGER DESTRUCTOR CO.

205-R East 42nd St., New York 17, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES



Fisher M-Scope "HAN-DEE" combination Leak Detector, Pipe Locator

Using the *latest type miniature tubes and batteries*, the new Fisher "HAN-DEE" Leak Detector and Pipe Locator combination precisely locates costly leaks in any pressure line. As a Pipe Finder, it accurately locates, traces the course, and measures the depth of buried pipes or cables.

Fisher "HAN-DEE" two-in-one unit

$142.50

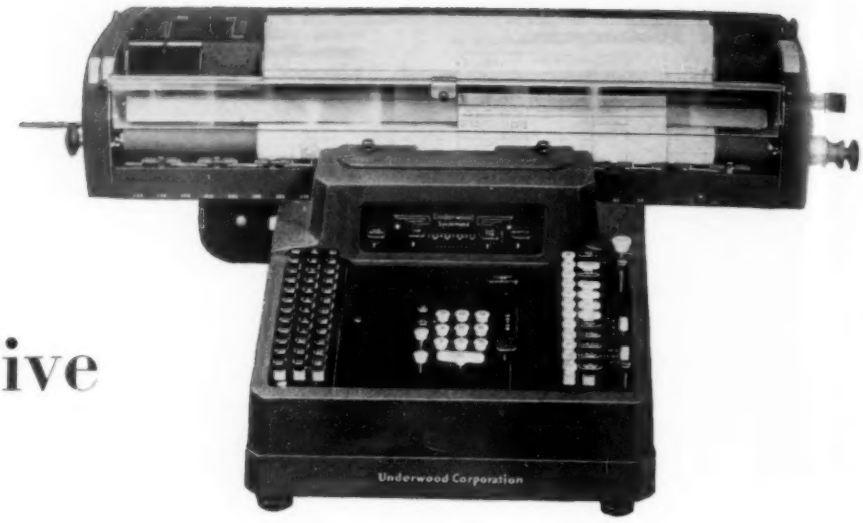
FREE LITERATURE

For Free illustrated catalog, specifications and price list on Fisher M-Scope equipment, write Dept. 3 today.

FISHER Research Laboratory, Inc.

Palo Alto, California

For More Than Twenty-Five Years



UNDERWOOD SUNDSTRANDS

have been lightening the load of municipal utility and finance departments.

For the last ten years the Hoboken, N. J., Water Department has been billing its 7000 customers quarterly with the aid of an Underwood Sundstrand Municipal Accounting Machine. Here's what Benjamin Gregory, Senior Bookkeeper and Accounting Machine Operator, says:

"First thing in the morning I post the previous day's money collections. Then I prepare bills on accounts read by the meter reader yesterday or the day before yesterday. The work proceeds quickly and accurately with the aid of the Underwood Sundstrand Municipal Accounting Machine. This has been my experience as until now."

UNDERWOOD CORPORATION

Accounting Machines . . . Typewriters . . . Adding Machines . . . Ribbons, Carbon Papers and Other Supplies

One Park Avenue — **New York 16, N. Y.**

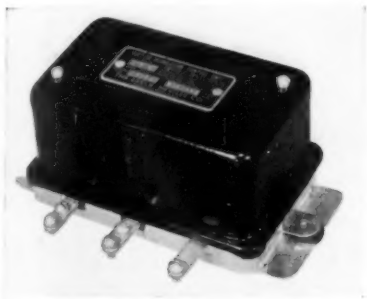
Sales and Service Everywhere

Electric Alternator For Municipal Trucks

To meet the needs of a wider range of users than was possible with the 60-ampere system, a 6-volt rectified a.c. alternator system is now available in versions delivering maximum outputs of 45 and 80 amperes.

The 45- and 80-ampere systems feature the same high output at low- and high-speed characteristics as the 60-ampere unit. The systems deliver from 25 to 35 amperes at idling speed, and maximum output at from 12 to 15 miles an hour. An added advantage of the new 45-ampere system, which sells at a somewhat reduced price, is simplified installation.

Originally developed for use in police cruisers, where many electrically operated accessories and two-way radio created a serious battery maintenance problem, the Leece-Neville a.c. system is now in use on thousands of fire-department vehicles, ambulances, highway trucks, utilities' emergency trucks, and buses.



The voltage regulator for the Leece-Neville a.c. alternator system.

Brushes are unnecessary with the alternator, and thus another frequent source of d.c. equipment failure is eliminated. Overcoming the need for frequently recharging storage batteries, and itself requiring less maintenance than d.c. systems, the alternator system has resulted in sharply reduced operating costs for its users. For full particulars address The Leece-Neville Co., Cleveland 14, Ohio.

Rockwell Appoints Dixon Divisional Vice-President

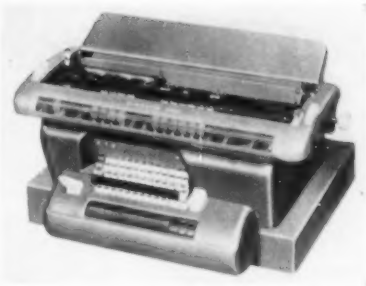
L. A. Dixon has been appointed vice-president of the meter and valve divisions of the Rockwell Mfg. Co., 400 N. Lexington Ave., Pittsburgh 8, Pa.

L. A. Dixon

Well known in the utility, petroleum, and municipal markets, Mr. Dixon started in 1926 at the Pittsburgh Equitable Meter Co., now a division of Rockwell, as assistant to the president. Later, he became president of the Pittsburgh DuBois Co. and continued to serve in that capacity when that company was acquired by Rockwell.

Streamlined Bookkeeping

Remington Rand Inc., 315 Fourth Ave., New York 10, N. Y., has decided that the naked bones of the bookkeeping machine should be clothed in an eye-appealing casing. The new 500 and 600 models no longer look like overgrown old-fashioned typewriters. In their way, they are as beautiful as the models on the margin of a Florida swimming pool, while accentuating through electrification the utilitarian function of the bookkeeping machine.



The keyboard is of the organ type. All operations — column selection, tabulation, spacing computation, and printing —are faster and quieter.

TYPE A PEERLESS PUMPS

TYPE A for

A*ll purposes.* For widest variety of general services. Handle water and alkaline fluids where no solids are in suspension.

A*dvanced design.* Double suction, single stage, horizontal split case construction. Ball bearing type. Dayton-Dowd design.

A*ll capacities and heads.* Sizes 1¼" to 48". For capacities up to 70,000 g.p.m.; heads up to 300 feet; temperatures up to 250 F.

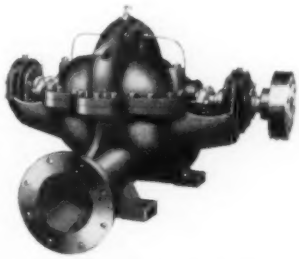
A*mple safety factors.* Component parts designed to afford high safety factor in operation and to extend pump life.

A*ccuracy in construction.* All parts machined to gauge on an interchangeable part system. Rigidly inspected in process.

A*ugmented service life.* Fully tested in Peerless' modern hydraulic laboratory to assure meeting or surpassing customers' application requirements.

FOR GENERAL PURPOSE PUMPING

When there's a pump in your plans, plan with a Peerless Type A General Service pump. Because of the large ranges in size, from 1¼" to 48", the widest range of applications is possible. There is a Type A pump with the capacity rating, head characteristics and type of drive to meet the requirements of most water pumping services in all industries.



Write for Bulletin describing and illustrating the design and the application of Peerless Type A pumps.

fmc PEERLESS PUMPS

PEERLESS PUMP DIVISION

FOOD MACHINERY AND CHEMICAL CORPORATION

FACTORIES: INDIANAPOLIS, IND.; LOS ANGELES 31, CALIF.

District Offices: New York 5, 37 Wall Street; Chicago 40, 4554 No. Broadway; Atlanta Office: Rutland Building, Decatur, Georgia; Dallas 1, Texas; Fresno, California; Los Angeles 31, California

PITTSBURGH • DES MOINES

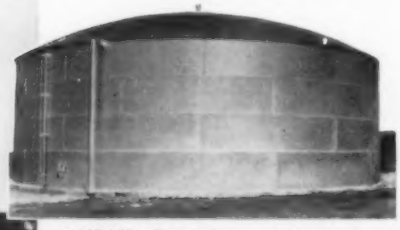
Steel Reservoirs

2,200,000-gallon steel reservoir, with ellipsoidal roof and ornamental pilasters. Diameter 80', height to roof 51'. Midland, Tex.

STRONG • PERMANENT
LOW IN COST....
for economical water storage

Two 3,000,000-gallon steel reservoirs, diameter 144', height 25'. Berryville, Va.

1,500,000-gallon steel reservoir, with ornamental cornice. Capitol Heights, Md.



1,000,000-gallon steel reservoir, diameter 84'3", height 24'10". Bottineau, N.D.

Steel—with its strength, permanence and low maintenance—offers the best service and greatest overall economy in water reservoir construction.

Steel Reservoirs by Pittsburgh-Des Moines provide these advantages fully—plus the design engineering experience, modern fabrication, expert erection and guaranteed satisfaction typical of this responsible organization. *Write for a quotation on your projected reservoir requirements, of any type or size!*

400,000-gallon steel reservoir, ellipsoidal roof; diameter 48', height 25'. Fort Benton, Mont.

Two 100,000-gallon steel reservoirs, cone roof; diameter 30', height 21'. Atlantic, Iowa

PITTSBURGH•DES MOINES STEEL C

Plants at PITTSBURGH, DES MOINES and SANTA CLA

Sales Offices at:

PITTSBURGH.....3412 Neville Island
DES MOINES..913 Tuttle S
NEW YORK...Room 915, 270 Broadway
DALLAS..1217 Praetorian
CHICAGO, 1216 First National Bank Bldg.
SEATTLE.....920 Lane S
SANTA CLARA, CAL.....619 Alviso Road

Mak-A-Sign For Street Markings

Each Mak-A-Sign street and highway marking kit, now being manufactured by the Mak-A-Sign Co., Birmingham, Ala., contains 114 aluminum stencil plates with three-inch-high characters (both letters and numerals).

Available in several models, the Mak-A-Sign kit may be used for stenciling on concrete, stone, and other rough surfaces, on boards or metal for street signs, and on curbs and sidewalks (marking names of streets, etc.). Several of the models are especially constructed to prevent the black spraying enamel from spreading beyond the stencil outline; this is necessary when stenciling on uneven surfaces such as concrete.

The complete kit consists of an index file case for carrying the stencil plates, a plate assembly frame, stencil plates, layout board, and a paint spray gun filled with black spraying lacquer.

Hand-Chased Bronze Tablets

This is one of the bronze plaques made by Newman Brothers, Inc., 659-665 W. Fourth St., Cincinnati 3, Ohio. The tablets, which may be made also of nonferrous metals of every description, are finished by hand-chasing and tooling. The pieces may be obtained in either a golden brown statuary finish or in an antique green finish, resembling the bronze of antiquity. The borders and letters are highly polished in contrast to the stippled and deeper bronze background. Memorial tablets, name plates, signs, letters are obtainable as well as standard or your specific designs.

Nary Appointed Vice-President

James A. Nary, has been made vice-president in charge of production of the United States Testing Co., Inc., Hoboken, N. J. He will supervise the company branch laboratories in New York, Boston, Chicago, Woorsocket, R. I., Philadelphia, and Los Angeles. The laboratories include chemical bacteriological, biological, and engineering.

PREPARE NOW
Keep the Job Going
WITH
HAUCK
HEATERS
and
THAWERS

FAST
EFFICIENT
POWERFUL
PORTABLE
2000 F.
HEAT

It won't be long now and you'll be needing a heater for your concrete mixer or for feed water—or a torch to thaw out frozen aggregates and dry out forms—or melt ice or snow—or a salamander for temporary heat. Remember there's a time-tried, performance-checked and guaranteed Hauck oil burning Torch Burner or Heater in just the size you need, for immediate delivery, ready to put right to work.

Wire, Write or Phone Us
Your Questions or Order
and get all "set" for cold weather

HAUCK MANUFACTURING CO.
112-122 Tenth St. Brooklyn 15, N. Y.

We Are Happy To Announce

The merger of Lewis Manufacturing Co., manufacturer of Pierce Bear Tandem Rollers, with the Browning Manufacturing Co., manufacturer of BMCO Pneumatic Tired and Sheeps Foot Rollers.

See your Dealer or contact us for full information on our complete line of compaction rollers.

A few territories are open to dealers under this new arrangement and we will welcome inquiries.

LEWIS-BROWNING MFG. CO.
111 Humble Ave. P. O. Box 2707
SAN ANTONIO 6, TEXAS

CONTROL ICE

More EFFICIENTLY

More ECONOMICALLY

with

SOLVAY
Trade-Mark Reg. U. S. Pat. Off.
Calcium Chloride

★ Stops Skids Quicker

★ Lasts Longer

★ Will Not Freeze in Stock Piles

SOLVAY SALES DIVISION
Allied Chemical & Dye Corporation
40 RECTOR STREET, NEW YORK 6, N. Y.

BRANCH SALES OFFICES:
Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit • Houston
New Orleans • New York • Philadelphia • Pittsburgh • St. Louis • Syracuse

Ludlow Appoints Bibb

Fred E. Bibb has been appointed assistant sales manager of The Ludlow Valve Mfg. Co., Inc., Troy, N. Y.

Fred E. Bibb

With Ludlow since 1943, Mr. Bibb has been promoted through the engineering and inspection departments to the sales department. Before coming to Ludlow, he had a background of 15 years of selling experience in the automobile industry and allied lines

New McCulloch Chain Saw

A new lightweight engine-driven chain saw, with all-purpose chain for fast ripping or cross-cutting, has been announced by McCulloch Motors Corp., 6101 W. Century Blvd., Los Angeles 45, Calif. The cutting unit is available in lengths up to 5 feet. The saw is designed for either one- or two-man use.

With a 2-cycle power unit, the equipment develops a full 5 hp. Starting has been simplified by two features. The first is a recoil starter designed so that it cannot kick; the second feature is a special magneto which delivers an extremely hot spark, even at low rpm.

All engine controls except the throttles have been grouped in a panel above the built-in gasoline tanks. The controls consist of an on-off ignition switch, a cleaning brush operated by a simple plunger to remove sawdust and other debris trapped by the filter, a cap which can be unlocked easily for lifting the filter entirely out of the panel for inspection, a large dial-type fuel valve, and a button plunger for priming the carburetor. The carburetor itself is a special McCulloch diaphragm type which, having no float, permits the engine to be operated in any position.

Power Wheelbarrow Has 1,000-Pound Capacity

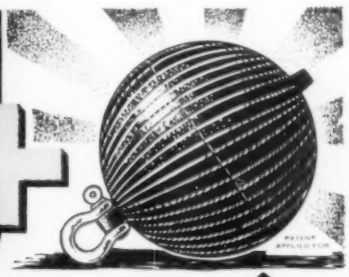
The Kwik-Mix Co., Port Washington, Wis., a subsidiary of the Koehring Co., recently marked its entry into the materials-handling field by introducing a

power wheelbarrow capable of holding 10 cubic feet, or about 1,000 pounds.

Called the Moto-Bug, the new unit handles either wet or dry aggregates and materials. Powered through V-belt drive and fully enclosed gears from an air-cooled 3.9-hp gasoline engine, the machine has speeds of from 2 to 4 mph, both forward and reverse, equalling a fast walking pace.

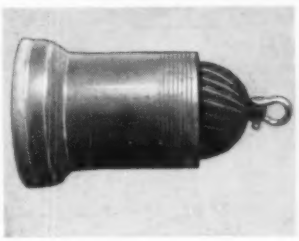
One of the principal features of the Moto-Bug is an instantaneous gravity dump body with a chain stop that assures a complete dump. Other features include a steering device that turns the machine in its own length. The Moto-Bug is 33 inches wide so doorways and narrow aisles can be maneuvered easily.

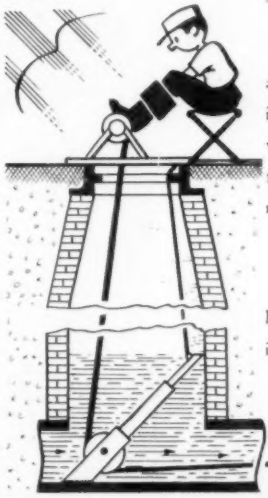
Efficiency PLUS + ..with the WAYNE ball



● Constructed of a scientifically compounded rubber. Diagonal ribs along periphery provide a squeegee action that removes slime along with sand, rock, etc.

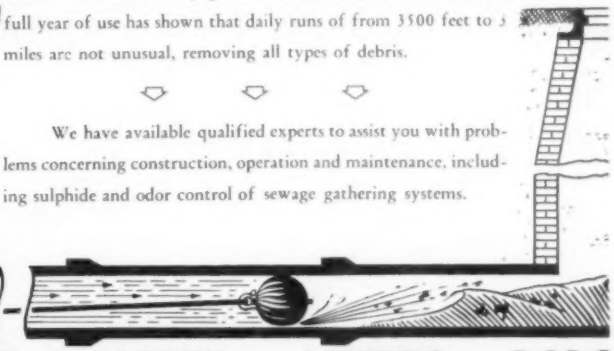
● Use of "WAYNE" BALL reduces trouble calls resulting from stoppages . . . three cubic yards of debris removed from 440' run of 12" sewer in 32 minutes.





The "WAYNE" BALL is so constructed that as pressure in line increases as a result of an increase in head, the interior pressure of ball is overcome causing a slight change in shape resembling an elongated plug, this releases a jet of water that automatically gains velocity as the hydrostatic head is raised. One full year of use has shown that daily runs of from 3500 feet to 3 miles are not unusual, removing all types of debris.

We have available qualified experts to assist you with problems concerning construction, operation and maintenance, including sulphide and odor control of sewage gathering systems.



NO MACHINES — CABLES — AUGERS — RODS

THIS COULD HAVE BEEN CHECKED!!

SIDU Co.
BOX 3537
LONG BEACH • CALIFORNIA

PATCH THOSE BEAT UP ROADS WITH THIS LITTLEFORD *UTILITY UNIT*

Model No. 101 Two-Wheel Trailer

When it comes to Road, Street and Highway Repair there's no unit that gives as much Utility as the Littleford No. 101 Utility Spray Tank. Here's a piece of Road maintenance equipment that will do any type of patch work needed. It has a *Spray Bar* for small application jobs, *Hand Spray Attachment* for patch work and a *Pouring Pot Outlet* for small patch jobs, crack filling and joint filling. Let's get our Roads back into shape—use the Equipment that will do all the maintenance jobs at lower cost—the Model No. 101 Utility Spray Tank. Write for Bulletin No. 5 for further details.

Pouring Pot Outlet

Hand Spray Attachment

MANUFACTURERS OF

"Spray Master" Pressure Distributors

"Tankar" Steam Heaters	Highway Brooms	Asphalt Supply Tanks
"Kwik-Melter" Roofers Kettles	Tool Heaters	No. 101 Utility Spray Tanks
Trail-O-Rollers	Trail-O-Distributors	84-HD Asphalt Kettles

BLACK TOP ROAD MAINTENANCE EQUIPMENT SINCE - 1900

LB **LITTLEFORD**

LITTLEFORD BROS., INC.

500 E. Pearl St., Cincinnati 2, Ohio

NEW JAEGER 125 FT. COMPRESSOR

DOES 40% MORE WORK

THAN 105 FT. MACHINES

Runs 2 Heavy Breakers or 3 Medium Breakers at Full Pressure of 90 Pounds.

yet costs no more and uses no more fuel when not delivering more air

all other new sizes are comparable:

Jaeger's "new standards" are 75 cfm instead of 60 — 185 cfm instead of 160 — 250 cfm instead of 210 — 365 cfm instead of 315 — 600 cfm instead of 500 — to match the requirements of today's air tools, run more tools at full pressure and efficiency, *do 30% to 40% more work for the same money.* See your Jaeger distributor or get new Catalog JC-8.

Main Office and Factory
Columbus 16, Ohio

the JAEGER machine co.

REGIONAL OFFICES: 1504 Widener Bldg. Philadelphia 7 · 226 N. La Salle St. Chicago 1 · 235 American Life Bldg. Birmingham 1

HAND
STORAGE BATTERIES
FOR MUNICIPALITIES

HAND storage batteries are heavy-duty batteries provided with heavy, hand-pasted tank-formed plates, heavy glass mats, acid and heat resisting micro-porous rubber separators, splash decks and genuine hard rubber containers. Built for use in Police Radio cars, Sanitation trucks, snow plows, sweepers, emergency trucks, ambulances, and fire apparatus.

The Hand Laboratory, Nyack, N. Y.

Down With Weeds

Springfield, Pa., set aside a weekend to the problem of getting rid of weeds and poison ivy, and here knapsack sprayers containing Weed-one 2,4-D products, manufactured by the American Chemical Paint Co., Ambler, Pa., are manned by a few of the volunteers that helped rid the town of the growths.

Athey Announces New Portable Crusher

A new portable crushing unit has been introduced by the Athey Products Corp., 5631 W. 65th St., Chicago 38, Ill., for use with the Athey force-feed loader.

Designed primarily to provide a fast and inexpensive means of reclaiming highway pavements, the machine reworks surfacing materials, black top, concrete, and gravel on the site, eliminating the necessity of transporting to and from a central crushing plant. The one-man-operated unit picks up scarified or broken material from the road, crushes it to any required size, and deposits it back on the roadway.

The crusher hopper it fitted with breaker bars which pulverize material and deflect it onto a grid iron, preventing the fines from entering the mill. The trailer is equipped with 13.00 x 24 tires, hydraulic brakes that are synchronized and operated from the force-feed loader brake pedal, and fitted with a spring-cushioned, automatic hitch coupling that provides an added safety feature.

The unit is 13½ feet long, 7 feet 10 inches wide, and 11½ feet high.

SALES ENGINEER WANTED

To represent an old established manufacturer of Water Works equipment in an Eastern territory. Must be an experienced salesman or have water utility experience. Permanent Position—Salary and Bonus.

Interview arranged on basis of letter stating educational background, experience, availability, salary desired and other pertinent information. If possible, enclose a recent photograph. References — replies held in confidence.

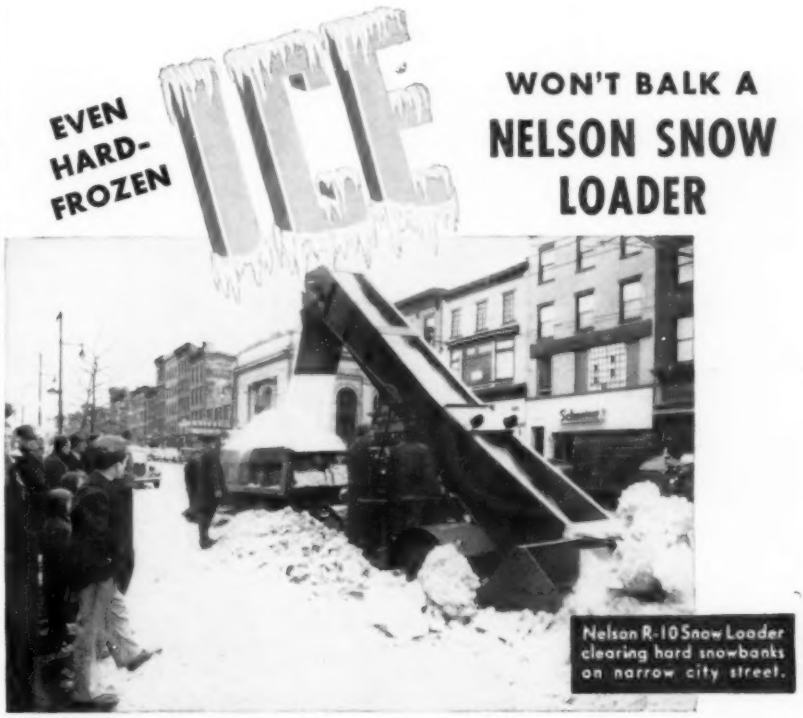
Address Box #296

THE AMERICAN CITY

470 Fourth Ave., N. Y. 17, N. Y.

EVEN HARD-FROZEN

WON'T BALK A NELSON SNOW LOADER



Nelson R-10 Snow Loader clearing hard snowbanks on narrow city street.

. . . IT PICKS BEFORE IT SHOVELS!

Ice storms, quick freeze-ups, hardened snowbanks — these snow-clearance headaches are routine, short-order jobs for a Nelson Snow Loader. That's because a Nelson is no mere "conveyor." *It picks before it shovels.* Steel-toothed, renewable blades dig deep and close, quickly get rid of frozen snow.

A Nelson is easy on pavement; operator has close control of depth of cut. Hydraulic hoist and a Nelson's agility in traffic are other features you'll like.

And a Nelson is useful all year 'round. It handles coal or cinders without a change. A Nelson bucket boom, separately available, speedily converts it into a rugged loader for road or pit, handling earth, sand or broken stone.

Get the facts and costs on the Nelson—and by all means see it perform—before you invest in a snow loader. Thrifty "Utility" and big "Heavy-Duty" sizes. Write for new bulletin.

NELSON

N. P. NELSON IRON WORKS, INC.

CLIFTON, NEW JERSEY · *Truck Loaders Since 1917*

No Two Cities Have Exactly The Same Trash and Rubbish Collection Problem . . .

The amazingly simple stages of pick-up, hauling and dumping the detachable containers are shown in the three photos above. In the top photo, driver has backed the truck hoisting unit up to the 8-cu. yd. apartment type container, attached two chains and returned to the hydraulic controls in the truck cab. In center photo, container has been hydraulically lifted into carrying position ready for hauling to disposal area for automatic dumping as shown in the bottom photo.

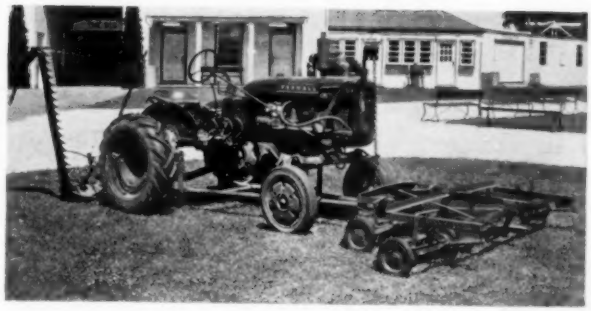
It's true! No two cities have the same problems of Trash and Rubbish Collection. In fact, no two parts of any one city have the same problems. In downtown areas, high concentrations of bulk rubbish must be collected almost daily; in housing centers some collections are made twice weekly and in residential districts one collection a week is sufficient. That's why in every city, a flexible system is needed. The Dempster-Dumpster System of rubbish collection meets every requirement.

With the Dempster-Dumpster System, your city can "tailor" rubbish collection to meet the output of any given section, regardless of the volume. Here's how it works. Enclosed rubbish containers, such as the one shown below are placed at collection points in business districts, apartment and housing areas, at schools and at factories. Once the rubbish is placed in these containers, no wind or animal can scatter it, no rats or flies can contaminate it. As these containers are filled, a Dempster-Dumpster truck hoisting unit, operating on scheduled rounds, picks up each container hydraulically, hauls it to and dumps it at the disposal area, then returns the empty container to its original position. One truck and one man, the driver, handle the entire operation at a tremendous saving in time, money and equipment. Why not write today for complete information.

DEMPSTER DUMPSTER
TRADE MARK REG.

DEMPSTER BROTHERS, INC. 8118 Dempster Bldg., Knoxville 17, Tenn.

Gang Mowers



The five-gang unit attached to a McCormick - Deering Farmall Type-A tractor.

A new Coldwell hitch employs five regulation cutting units to make an over-all cutting width of 96 inches. The frame is attached in front of the tractor and is so designed that it has the effect of being pulled rather than pushed, increasing mowing efficiency and speed.

An additional feature of this hitch manufactured by the Coldwell-Philadelphia Lawn Mower Co., Inc., Newburgh, N. Y., is an hydraulic-lift device which enables the operator to raise or lower the entire assembly automatically from his normal riding position; cutting equipment is raised entirely free of the ground and the tractor can be moved across walks, etc., from job to job.

While the gang cutting units are operating, the regular sickle-bar attachment can be used simultaneously to mow rough grass.

The frame can be supplied to fit any type of tractor. A three-gang unit with a 60-inch cutting width is also available.

New Turbine Pumps From Peerless

A cross-section of the Peerless-Champion turbine pump.

A new turbine pump for small-diameter deep wells which is capable of developing water capacities to 5,000 gph from depths as great as 200 feet is announced by the Peerless Pump Div. of the Food Machinery and Chemical Corp., Los Angeles 31, Calif.

The Peerless Champion is an open-line shaft pump; bowl and shaft bearings are lubricated by the well's own water and no oil is used underground. Semi-open impellers, streamlined porcelain-enameled bowl sections, and rubber bearings contribute to smooth water-lifting with minimum losses due to turbulence. Long cutless fluted rubber shaft bearings spaced every 5 feet resist sand and abrasion conditions.

Particularly well adapted to a vertical-tank pneumatic-pressure system, the Champion is capable of developing pressures up to 90 pounds or more. The mechanism may also be applied, close-coupled, to short settings for developing water from pits and sumps for supplying water for air conditioning, cooling-tower service, and similar applications where amounts of solids in suspension is negligible.

Driving arrangements available for the Champion are standard direct-connected electric motor, 1 to 10 hp; right-angle geared drive for use with horizontal engines, and multiple V-belt or flat-belt pulley.

The

FORD COPPERHORN

SLASHES TIME ON VERTICAL METER SETTINGS

The Ford Copperhorn provides the ideal setting for a meter on vertical piping. Installation requires but one or two cuts and threads and eliminates the many pipe fittings usually required to set the meter upright.

Not only does it slash labor and time, but it actually cuts the pressure loss to less than half of what it would be through the fittings it replaces. Oversize copper tubing and wide, sweeping curves offer practically no resistance to the flow of water.

Best of all, the setting is permanently aligned for fast meter changes. Construction is entirely of copper and bronze. No electrical bonding required around meter.

For further information, send for new Ford Catalog No. 46.

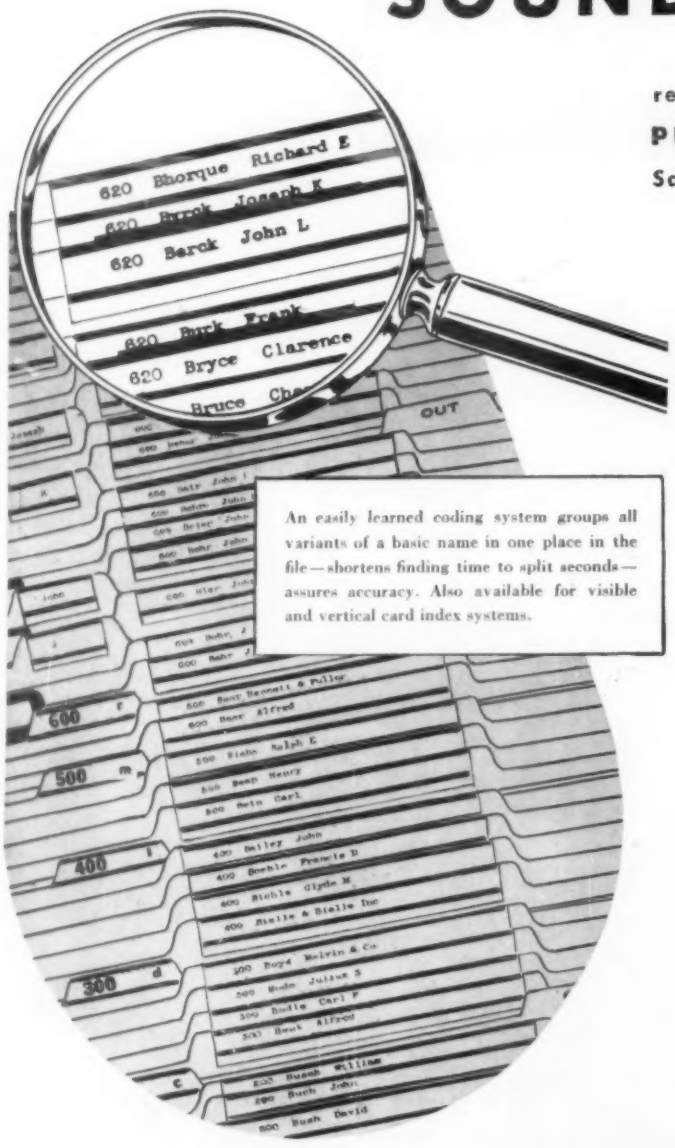
THE FORD METER BOX COMPANY, INC.

FORD

FOR BETTER WATER SERVICES

Wabash, Indiana

"We speed service, cut costs with SOUNDEX filing"



An easily learned coding system groups all variants of a basic name in one place in the file—shortens finding time to split seconds—assures accuracy. Also available for visible and vertical card index systems.

SEND IN NOW for your Free copy of Systems for Government Administrators—24 page magazine in color issued four times a year and packed with illustrations and descriptions of modern record systems developed for municipal, county, state and federal departments. Your name on our mailing list will assure you a copy of the forthcoming issue and regular receipt of all future issues—WITHOUT COST. A limited number of back copies are also available.

report officials of

PUBLIC WELFARE DEPARTMENT

San Francisco, California

SOUNDEX brings similar names together for convenient reference; differences in spelling are no longer a problem. Soundex has proved its superiority in a very dramatic way: tests have shown that Soundex will locate a name in a file of millions of names in *ten to fifteen seconds!*

When the records of the Public Welfare Department for the City and County of San Francisco were reorganized and consolidated recently, Remington Rand Soundex was chosen as the ideal indexing method to eliminate confusion due to variations in spelling of the same name. This problem is especially acute in the Golden Gate community as it is in other cities of mixed racial and linguistic stocks.

★ ★ ★

Stepped-up filing efficiency in municipal government departments means better service—less waiting in line for the public, and lower costs to the taxpayer through elimination of waste motion and unnecessary paperwork. Remington Rand makes *all* types of simplified filing systems—for *all* governmental filing needs—and will assume responsibility for their installation without interruption to routine office operation. For details call our office *now*, or write Systems Division, 315 Fourth Avenue, New York 10, N. Y.

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1873 THE FIRST TYPEWRITER 1948 · 75th ANNIVERSARY · REMINGTON RAND INC.

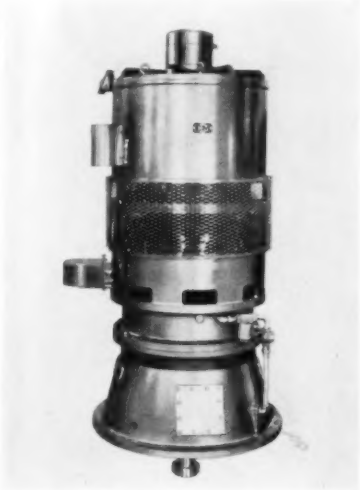
Remington Rand

THE FIRST NAME IN RECORD SYSTEMS

Precision in Sewage-Pump Control

Precise control of pump speeds to handle varying sewage-flow conditions is highly desirable in sewage-disposal plants. This is particularly true where wet-well storage capacity is limited and close regulation of flow is needed.

This precisely adjustable control is secured by use of the adjustable-speed magnetic drive. The magnetic drive couples the drive motor to the pump by magnetic means. There is no mechanical connection.



The complete magnetic-drive unit, ready for attachment to the pump housing. The synchronous motor is on top, the magnetic-drive unit is in the center, and the gear-reduction mechanism is at the bottom.

The magnetic drive consists of only two main elements, the magnet and the ring. The magnet consists of salient poles mounted on a spider and carrying field coils. Its construction is virtually the same as the rotor of the synchronous motor. The ring consists of a solid steel ring in the smaller sizes and of a laminated core and squirrel-cage winding in the larger sizes. The magnet acts as a rotor inside the ring. Both are free to turn, however, with the ring—or outer element—coupled to the motor, and the magnet—or inner element—attached to the pump or high-speed shaft of the reduction gear. As the driven element, or ring, is driven at motor speed there is relative motion between it and the magnet. When the magnet is excited this motion induces eddy currents in the ring and causes a turning torque to be transmitted through the air-gap. At any slip the amount of torque is roughly proportional to the excitation. By varying the amount of excitation the transmitted torque is controlled.

The speed change is smooth, with no jumps. The magnetic drive, with Regutron control, is sensitive to any call for speed change. A snubbing and anti-hunt circuit brings the magnetic drive to the exact speed called for and holds it there.

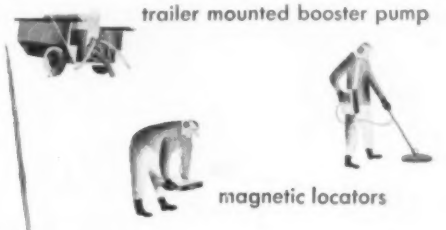
The magnetic drive is particularly adaptable where float switch controls are used. The float may be located in the suction well or the pump may be controlled from the discharge end.

Each pumping unit may have its individual float or one float may be used to control all pumps. This latter system of control causes all pumps to run at the same nominal speed and gives the highest system efficiency. If desired, the control may be set up for automatic programming so that increased flow starts up succeeding pumps as needed, and decreased flow causes pumps to be stopped. In all cases either automatic or manual control, or both, may be used in starting and running.

The magnetic drive is applicable to horizontal- or vertical-shaft pumps. With horizontal-shaft pumps the motor and drive may be mounted on the same base with the pump, to preserve alignment. With vertical-shaft pumps the motor is supplied with a ring base which houses and protects the magnetic drive. The ring base is mounted directly on the reduction gear or pump. This eliminates a separate motor floor and long connecting shaft.

The magnetic drive is manufactured by the Electric Machinery Mfg. Co., Minneapolis 13, Minn., in sizes ranging from 27 to 2,000 horsepower. The speed at which the magnetic drive is to be driven is a factor in the proper selection of its size.

all this and radio too,

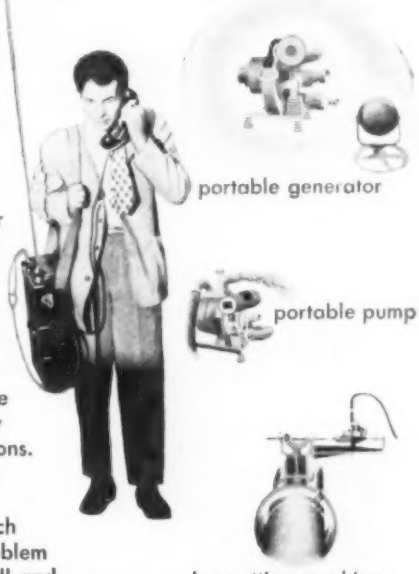


helps NATIONAL clean water mains faster, better and more economically

The highly specialized equipment employed by the National Water Main Cleaning Co. today includes: walkie-talkie radio systems for maintaining constant communication between the point of operation and control valves or pumping stations, magnetic locators for tracing underground pipe, truck-mounted pumps for dewatering, trailer-mounted booster pumps for stepping-up pressure, pipe cutting machines and a tremendous variety of cleaning heads developed to meet the requirements of varying pipe sizes, conditions and layouts.

Even more important than adequate equipment is the experience necessary to cope with all conditions and situations. The nature of the obstruction, varying pipe sizes, unusual pipe layouts, the character of the water — all make each cleaning assignment an individual problem calling for specialized experience, skill and equipment.

We'll be glad to check the condition of your water mains, recommend the required treatment and estimate the cost of National Water Main Cleaning service. Write today.

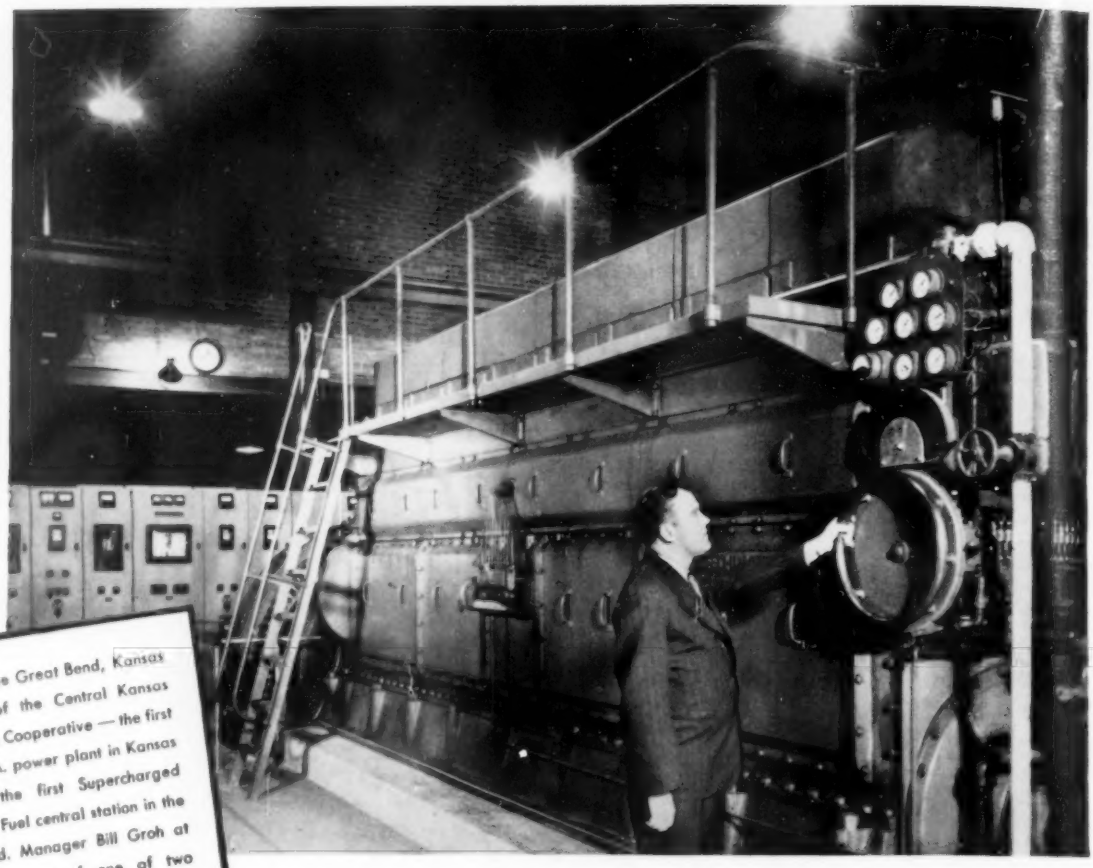


new 18" cleaning head

NATIONAL WATER MAIN CLEANING COMPANY

50 Church Street, New York 7, N. Y. 28

ATLANTA, 1221 Mortgage Guarantee Building • BOSTON, 115 Peterboro Street • CHICAGO, Room 1336, 122 So. Michigan Avenue • HOUSTON, 2518 Grant Street • KANSAS CITY, 421 BMA Building LOS ANGELES, 448 South Hill Street • MEMPHIS, 822 Dermon Building • OMAHA, 3812 Castellar Street • RICHMOND, 210 East Franklin Street • SPRINGFIELD, MO., 844 North Main Street • SALT LAKE CITY, 149-151 W. Second So. Street • SAN FRANCISCO, 681 Market Street • MONTREAL, 2028 Union Ave. • VANCOUVER, B. C., 505 West 1st Ave. • WACO, P. O. Box 887 • WINNIPEG, 576 Wall Street • HAVANA • MAYAGUEZ, PUERTO RICO • BOGOTA • CARACAS • MEXICO CITY



Inside the Great Bend, Kansas plant of the Central Kansas Electric Cooperative — the first R. E. A. power plant in Kansas and the first Supercharged Dual Fuel central station in the world. Manager Bill Groh at the control of one of two Worthington Type SEHGO-8 Dual Fuel Diesel Engines.

"TOTAL FUEL AND LUBRICANT COST PER KWH—$0.0015+!"

Kansas R. E. A. Station Reports Steady Savings With Worthington Supercharged Dual Fuel Diesels

One way to get the real low-down on economical generation of electric power is from a progressive R. E. A. plant. Here, in part, is what the Central Kansas Electric Cooperative Association has to say about its Worthington Dual Fuel Diesel equipment:

"Our engines have run approximately 3050 and 4100 hours, respectively, under loads varying from 300 to 1160 KW. Operation has been satisfactory at all loads.

"One remarkable point is the low lubricating oil consumption . . . Also, we have had very little maintenance work.

"The past month the total fuel and lubricant cost per KWH generated has been 1.517 mills. . . . The saving of gas over fuel oil is very great.

"A fire necessitated shutting off our gas line for 12 hours. We switched to oil Diesel operation without any interruption."

Economy In Every Detail

With Worthington Dual Fuel Diesels you get outstanding thermal efficiency on the cheapest fuel available — oil, gas or oil-and-gas in any ratio — while Worthington's long leadership in developing Diesel design and performance means additional power for every operating-dollar you spend. For further proof that *there's more worth in Worthington*, contact *Worthington Pump and Machinery Corporation, Engine Division, Buffalo, N. Y.*

WORTHINGTON

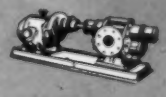
EG-2

YOUR PARTNER IN POWER PROGRESS

Diesel engines, 150 to 2,640 hp . . . gas engines, 175 to 1,720 hp . . . dual fuel engines, 225 to 2,640 hp.

WORTHINGTON-BUILT AUXILIARIES

Air King Compressors

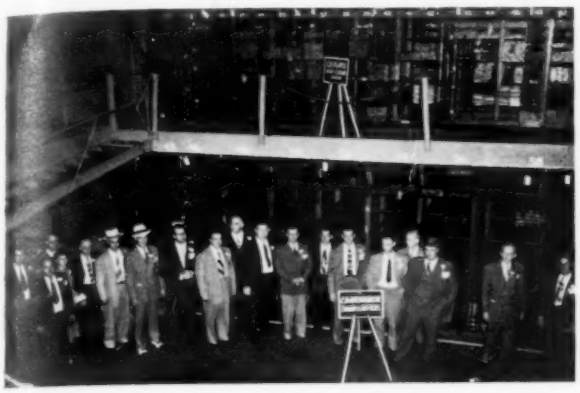


Oil Transfer Pumps

Cooling Water Circulating Pumps

Evaporative Type Engine Water Cooler

Ryerson Holds Open House at Pittsburgh-Area Plant



Joseph T. Ryerson & Son, Inc., Box 8000-A, Chicago 80, Ill., steel distributors, held open house at its Pittsburgh, Pa., area steel-service plant recently, showing almost 3,000 customers around the plant, which is located on Arch St. and Bell Ave., Carnegie, Pa. The tour also included an inspection of the company's facilities for stocking, handling, cutting, and shipping steel of all kinds.

Caterpillar Appoints Distributor, Representatives

Henry H. Howard, general sales manager of the Caterpillar Tractor Co., Peoria, Ill., has announced that the Inland Machinery Co. of LeGrande, Ore., has been appointed a distributor for Caterpillar products for five eastern counties of Oregon.

Caterpillar has also appointed two district representatives in the Eastern Sales Division: Gerald W. Wilson to represent northern Georgia, South Carolina, and eastern Tennessee, and William F. Jordan will cover northern Ohio, Michigan, and West Virginia.

Wm. F. Jordan Gerald W. Wilson

Cut your Asphalt Costs

on those small mix jobs!

● The Foote Kinetic Asphalt Mixer with its new unusual method of mixing will give you eight to ten batches more per barrel of asphalt in less time than any other method. This saving will soon pay for the mixer.

Remember, too, that it is fully portable, can be towed behind any truck or car, handles any cold mix without additional equipment and can handle hot mixes in conjunction with kettles.

Capacity 3 cu. ft. in 30 seconds. Ask for Bulletin K-100 describing the mixer and mixing method in detail.

Builders of . . .
Adnun Black Top Pavers, MultiFoote Concrete Pavers and Foote Kinetic Mixers

the FOOTE Kinetic mixer

THE FOOTE COMPANY, INC.

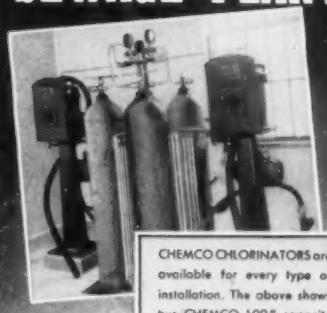
1958 STATE STREET NUNDA, NEW YORK

Subsidiary of Blaw-Knox Company

CHEMCO *Equipment*

FOR EVERY CHLORINATION AND WATER CONDITIONING PROBLEM

For Your **SEWAGE PLANT**

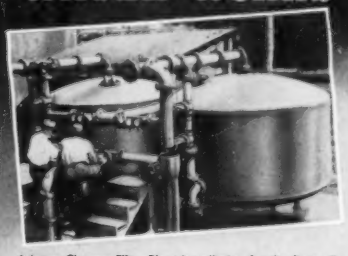


CHEMCO CHLORINATORS are available for every type of installation. The above shows two CHEMCO 100# capacity chlorinator installed for the State of New York. Note use of Aqua-Thermal Coils.

For Your **SWIMMING POOL**

CHEMCO has "Everything for the Swimming Pool" from the Filters to the Life Preservers.

For Your **WATER WORKS**



A large Chemco Filter Plant installation for the Santa Fe Railroad, Winslow, Arizona. Consult CHEMCO first for your Chlorinator or Water Conditioning Problem.

CHEMICAL EQUIPMENT CO.
1700 NO. MAIN STREET
P. O. Box 3098 Terminal Annex
Los Angeles 54, Calif.
MIDWEST FACTORY BRANCH
205 W. Wacker Drive Chicago 6, Ill.
AGENTS IN PRINCIPAL CITIES

INSURANCE AGAINST DEATH!

Save Lives! Skid-Proof with The BAUGHMAN Spreader

YOU GIVE your citizens quick effective insurance against dangerous driving conditions when you use the BAUGHMAN Spreader.

FAST ACTION! Spreads 8- to 30-ft. widths at speeds up to 25 mph. *ALL-WEATHER OPERATION*—built-in exhaust heater prevents freezing of conveyor chain and material . . . keeps material in working condition. *CUTS COSTS*—self-unloading, it's operated by one man.

CAB CONTROL!
Vacuum clutch control in cab starts and stops drag chain and spinner. Prevents waste . . . skidproofs hills and curves to desired lengths . . . spot-spreads at junctions — ALL ONE-MAN CONTROL!

CONCENTRATED SPREAD
Baffle plates limit width of spread . . . stop waste . . prevent damage to passing cars and injury to pedestrians. Completely regulated volume . . . uniform spreads.

PROVEN LOW PRICE . . . QUICK DELIVERY

RUGGEDLY BUILT on Baughman's efficient production line. Result: lower production costs—and the savings are passed on to you.

READY TO SHIP on receipt of your order. You can start giving your citizens protection *this winter!*

Write for Full Information

BAUGHMAN

BAUGHMAN MANUFACTURING CO., Inc.
2111 Shipman Rd. Jerseyville, Ill.
"There is a Baughman Distributor Near You"

FLINK SPREADER

UNQUESTIONABLY THE FINEST HYDRAULIC SPREADER

Hundreds more transportation companies, cities and counties are using Flink Spreaders to spread granulars in ice control and highway maintenance work. Spreads forward or backing up, full or half width of street. Controlled from cab.

Write for literature.

FLINK CO. Dept. S-1, STREATOR, ILL.

LEADITE

FOR JOINTING CAST-IRON WATER MAINS

Melted and Poured ***No Large Bell-holes to Dig***

Saves at Least 75%

Leadite is shipped in powder form, packed in sacks of 100 lbs. net each. Leadite tested and used for over 50 years • Leadite joints improve with age.

Be sure it is Leadite and accept no imitations

THE LEADITE COMPANY
Girard Trust Co. Bldg., Philadelphia 2, Pa.

No Caulking

WORTHINGTON-GAMON

LIQUID METERS

All Sizes All Types

Worthington-Gamon Meter Co.
Subsidiary
WORTHINGTON PUMP & MACHINERY CORP.
296 South Street Newark 5, New Jersey

New Floodlights

Two new general purpose floodlights (300/500 and 750/1,000 watts) for small area lighting have been announced by the Lighting and Rectifier Divisions of the General Electric Company, Schenectady, N. Y. A tightly sealed hinged door, which is locked by three clamping lugs, replaces the clamped ring on older types. Both units can be provided with a portable base as well as slip fitter and pipe clamp mountings.

Mack Pumper on New Stamp

This is the Riverdale, Md., Mack pumper which is being used on the commemorative stamp recently issued.

Honoring the 300th anniversary of Volunteer Firemen in America, the United States Post Office Department has issued a special commemorative stamp. Bearing a likeness of Peter Stuyvesant, organizer of America's first volunteer fire department, and with drawings of an old hand-pump and a modern streamlined Mack Type 85 750-gallon pumper flanking the portrait, the stamp was first placed on sale at Dover, Del., on October 4, the day set for the celebration of the anniversary.

The Mack pumper was selected as a model by the government stamp designer from an assembled group of over 50 photographs. It is owned by the Riverdale (Md.) Fire Department and was part of a parade which jointly celebrated the anniversary and the housing of a new Mack pumper, manufactured by Mack Trucks, Inc., Empire State Bldg., New York, N. Y., recently purchased by the Robbins Hose Company, Dover's volunteer fire department.

CEMENT GUN COMPANY

"GUNITE" CONTRACTORS

GENERAL OFFICES—ALLENTOWN, PENNA., U.S.A.

NO MAINTENANCE IN 23 YEARS

The before and after photos show a reservoir we re-lined with "GUNITE" in 1925 for the Village of East Aurora, N. Y. Recently Mr. V. E. Haemmerlein, Village Engineer, wrote us:

"The job you did of Guniting our reservoir is still in first class condition. Some hair cracks have developed near the top. I drilled one-half inch holes where some of these cracks showed but find that they are only about one inch deep. They do not go beyond reinforcing. We have made no maintenance whatsoever."

We can similarly solve your problem if you have an old leaky or disintegrated reservoir. We invite you to call on us for complete information, recommendations or estimates on any "GUNITE" work which you may be planning.

Before you repair, reinforce or rebuild any structure of stone, brick, concrete or metal, discover the possibilities of "GUNITE." Write for full information today.

How often are you refilling sweeper broom cores?

AFRICAN BASS FIBRES

INDIAN PALMYRA STALKS

Fresh, high quality fibres make a big difference in sweeper mileage you get between broom core refills. We are able to offer you the best fresh quality fibres in all types and sizes. Your inquiry will receive our prompt attention.

MOUNTAIN HICKORY SPLINTS

STEELWIRE CHINA SPLIT BAMBOO

The OTTO GERDAU CO.

Established 1872

82 Wall Street, New York 5, N.Y.

Put new industries in your city ...with municipally softened water

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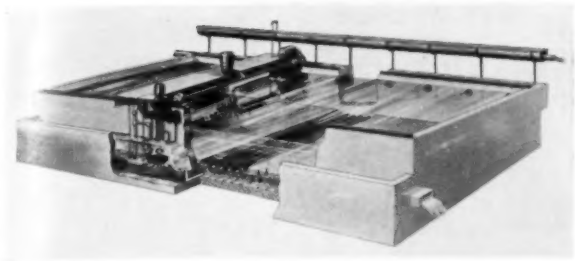
WATER CONDITIONING HEADQUARTERS FOR 35 YEARS

New Hardinge Filter Shown at Detroit Sewage-Works Show



A cutaway drawing of the Hardinge backwash rapid sand filter.

The Hardinge Co., Inc., 240 Arch St., York, Pa., featured a new automatic backwash rapid sand filter in its exhibit at the annual convention of the Federation of Sewage Works Associations, Hotel Statler, Detroit, Mich., on October 18 to 21.

Basically, the filter consists of a compartment filter bed and traveling backwash mechanism which moves along the filter bed on a predetermined time cycle, cleaning one compartment of the filter at a time. Thus the filter remains in continuous operation at all times. No shut-down or change-over is necessary while settled solids are being removed from the filter bed.

S. L. Nevins Joins Mathieson

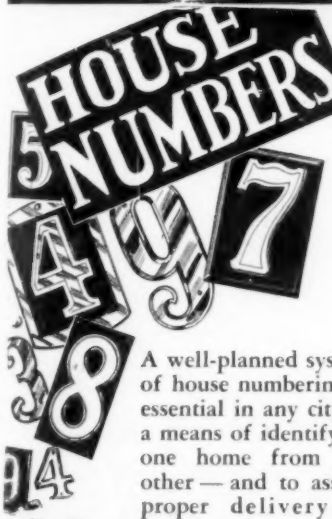
S. L. Nevins has joined the Mathieson Chemical Corp., 60 E. 42nd St., New York 17, N. Y., as general manager of the company's newly formed ammonia department.

S. L. Nevins

Credited with a number of developments in the manufacture of fertilizer chemicals, Mr. Nevins served on the sulphuric-acid and super-phosphate advisory committees for the War Production Board and the Office of Price Administration; since World War II he has been on the Industry Nitrogen Advisory Committee to the Department of Commerce.

PREMAX

HOUSE NUMBERS



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...when you use Heil Colecto-Paks to provide better sanitation and service — at lower cost

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Here are a few of the Heil Colecto-Pak features that you can count on to speed up, simplify, and improve your garbage and refuse collection:

Totally-enclosed steel body, developed with the help of recognized health and sanitation authorities, keeps garbage and refuse out of sight and smell — eliminates the hazards of flies.

Easy loading — average loading height is only 36 inches. Your crews load faster, easier, and with less strain.

Efficient use of body space cuts down trips to the dump, saves gasoline and tires, speeds the work. You see, the packer plate compresses the material toward the discharge end so that 24 cubic yards of wrapped garbage are carried in a 12-cubic yard body.

The Heil Colecto-Pak, designed for garbage, is available in 9- and 12-cubic yard sizes. The Heil Colecto, a twin brother of the Colecto-Pak, except that the packer plate is omitted, is designed for handling ashes and refuse. Give your community greater health and satisfaction, at lower cost — specify Heil Collecto-Paks or Colectos on your next bid. Write for descriptive literature.

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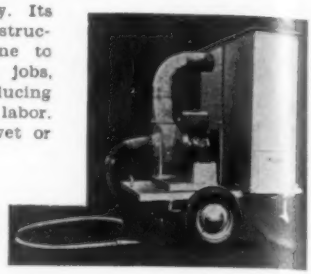

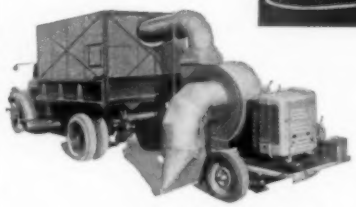

ABOVE: Utility Vacuum Cleaner, for small areas

AT LEFT: Vacuum Leaf Loader

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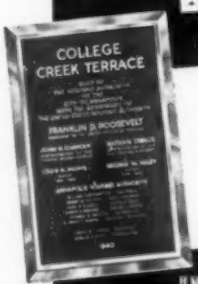

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Swivel Belt Conveyor on Snow Loader

The swivel belt conveyor makes it easy to maneuver the snow loader.

A swivel belt conveyor designed to speed snow removal regardless of traffic conditions is the outstanding feature of the Model 300 WS-SBC Haiss snow loader, produced by the George Haiss Mfg. Co., Inc., division of Pettibone Mulliken Corp., 141st to 144th Sts. on Park Ave., New York 51, N. Y.

Swinging through an arc of 22 feet, the swivel conveyor discharges snow to trucks on either side of the loader. Since the conveyor extension extends over the highest truck cabs, snow can be dumped into trucks going either backward or forward.

Heavy feeding propellers on the loader chop and lift as they dig, so that wet, dry, or hard-frozen snow is handled with equal facility. The machine has a capacity of 15 to 20 yards per minute, and works close to curbs and around parked cars.

Goudey Opens Office In Glendale, Calif.

R. F. Goudey, consulting, sanitary, and chemical engineer, has opened an office at 302½ South Brand Blvd., Glendale 4, Calif., specializing in all types of water-treatment problems, treatment and disposal of sewage, and laboratory service in the fields of routine control, investigations, research, and pilot-plant operation in all phases of water and sewage problems.

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Portable Electric Hand Lamp Throws 2,000-Foot Beam

A new portable electric hand lamp with built-in charger is being manufactured by the U-C Lite Mfg. Co., 1050 W. Hubbard St., Chicago 22, Ill.; Big Beam Model 312 is particularly valuable for police and fire departments, maintenance men, personnel of municipal departments, and on airfields.

One of the principle features is a spill-proof rechargeable battery with acid-proof plastic case; the battery has a service life of from three to five years. Incorporated in the battery itself is a three-ball charge indicator that eliminates guesswork on battery condition.

The lamp head is 6 inches in diameter and of chromium-plated, 20-gauge steel with a triple-silvered reflector. A single pole, double-throw, toggle-type switch gives finger-tip control to either the main bulb for the 2,000-foot beam or the small auxiliary bulb for dim diffused light. The head has a swivel adjustment vertically within 170 degrees.

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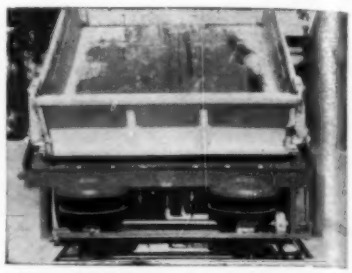

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Statement of the Ownership, Management, Circulation, etc., Required by the Act of Congress of March 3, 1933, of The American City, Published Monthly at New York, N. Y.: October 1, 1948.

State of New York, County of New York ss.:

Before me, Notary Public in and for the State and County aforesaid personally appeared EDGAR J. BUTTENHEIM, who having been duly sworn according to law, deposes and says that he is the President and Business Manager of the American City Magazine Corporation, Publishers of THE AMERICAN CITY and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of March 3, 1933, embodied in Section 537, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:

Publisher, AMERICAN CITY MAGAZINE CORPORATION, 470 4th Ave., New York 16.

Editor, HAROLD S. BUTTENHEIM, 470 4th Ave., New York 16.
Managing Editor, None.
Business Manager, EDGAR J. BUTTENHEIM, 470 4th Ave., N. Y. 16.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.)

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3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders, and security holders as they appear upon the books of the company but also, in cases where the stockholders or security holder appear upon the books of the company as trustee or in any other fiduciary relation, the names of the person or corporation for whom such trustee is acting, is given, also that the said two paragraphs contain statements embracing affiants' full knowledge and belief as to the circumstances and conditions under which stockholders and security holders, who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner, and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him. AMERICAN CITY MAGAZINE CORPORATION.

Sworn to and subscribed before me this 1st day of October, 1948
New York County Clerk's No. 736
(My commission expires March 30, 1950)

EDGAR J. BUTTENHEIM, Pres.
EDWIN WAGNER
Notary Public
New York Co. N. Y.

Wakeeney, Kans., Gets Trailer-Mounted Street Flusher

The trailer-mounted street flusher recently acquired by Wakeeney, Kans., can be hooked to any truck: it neither ties up rolling equipment nor requires a large investment. The unit is manufactured by the Standard Steel Works, North Kansas City 16, Mo.

Power Mowers with Sulky

The Eclipse Lawn Mower Co., Prophetstown, Ill., manufactures a complete line of hand and power mowers. One of the most practicable for large area mowing is the 32-inch Sulky Speedway mower.

Equipped with pneumatic tires, the machine has an automotive-type differential with six steel-cut gears. The engine is a Briggs & Stratton, 4-cycle, Model BR6 which develops 3.55 hp. About 4 hours of operation may be obtained from the 1-gallon tank. The cutting width is 32 inches. An optional extra is the Eclipse sharpening device, which attaches to the mower and requires no dismantling of the blades for sharpening. The lower lip of the Speedway has a skid for turf protection and a raised lip for long wear. The height of the cut may be adjusted from 1 to 2½ inches; speed is 5 to 7 mph.

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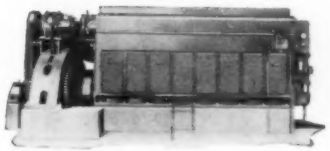

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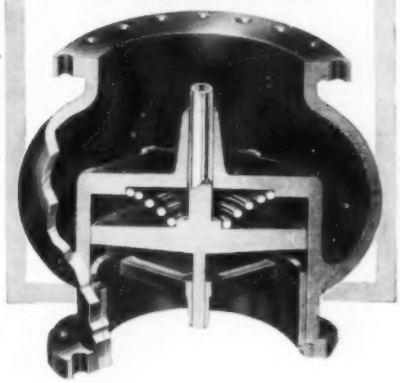

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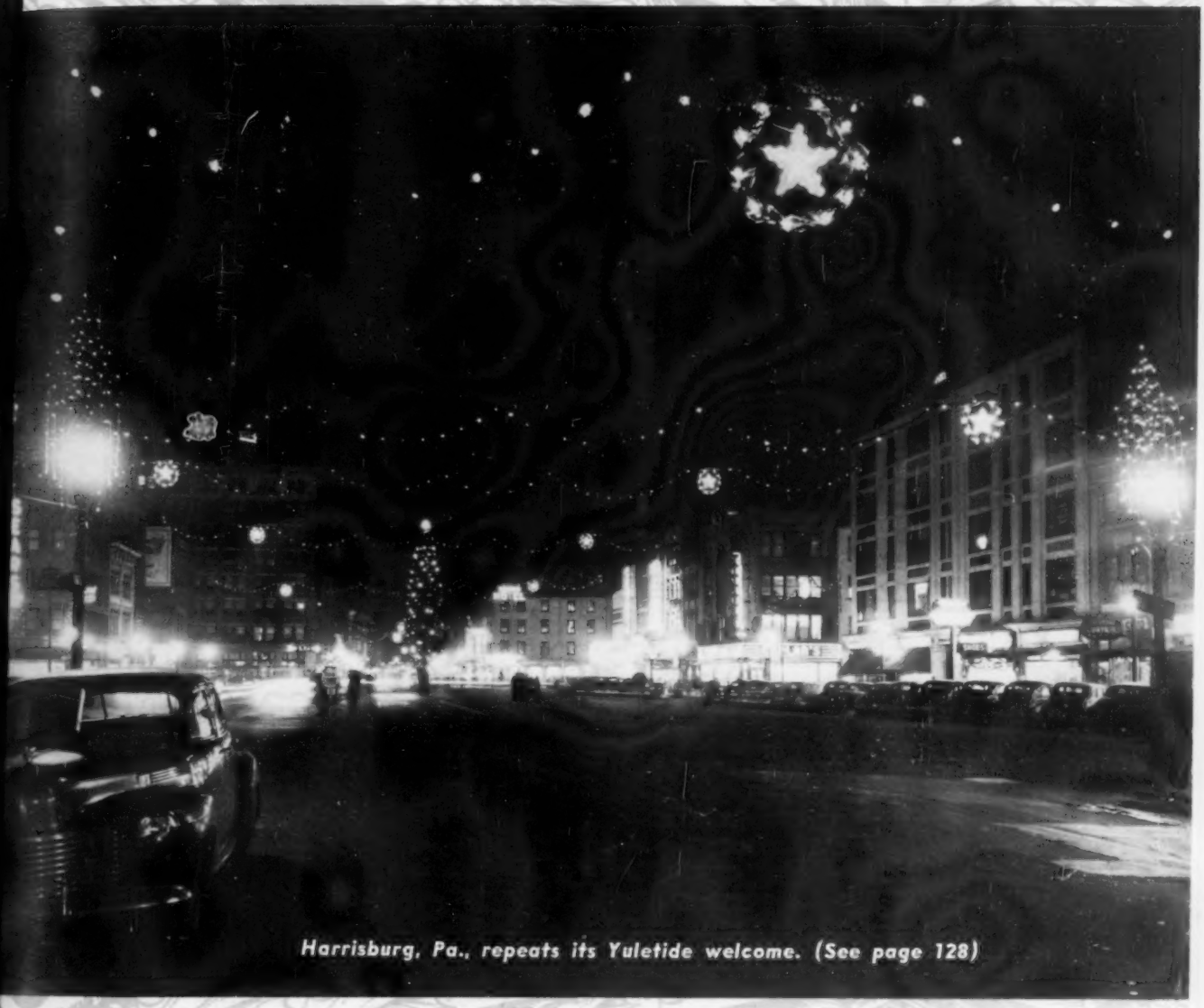

Harrisburg, Pa., repeats its Yuletide welcome. *(See page 128)*

MAY THE SPIRIT OF CHRISTMAS, this year, be evident throughout the world, not only in glistening lights and community trees, but also in a marked growth of interracial and international friendliness, spreading upward from the community level, which will bring just and permanent peace to men of good will.